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<p>(21) International Application Number: PCT/US99/28105</p> <p>(22) International Filing Date: 24 November 1999 (24.11.99)</p> <p>(30) Priority Data:</p> <table> <tr><td>60/109,984</td><td>25 November 1998 (25.11.98)</td><td>US</td></tr> <tr><td>09/419,129</td><td>15 October 1999 (15.10.99)</td><td>US</td></tr> <tr><td>09/419,147</td><td>15 October 1999 (15.10.99)</td><td>US</td></tr> <tr><td>09/419,312</td><td>15 October 1999 (15.10.99)</td><td>US</td></tr> <tr><td>09/419,426</td><td>15 October 1999 (15.10.99)</td><td>US</td></tr> </table> <p>(71) Applicant: GOTSAVINGS.COM [US/US]; 1887 Landings Drive, Mountain View, CA 94043 (US).</p> <p>(72) Inventors: WILLIAMS, Humphrey, N., S.; 882 Chimalus Drive, Palo Alto, CA 94306 (US). KAN, Immanuel; 3124 Santa Maria Drive, Concord, CA 94518 (US).</p> <p>(74) Agent: LOHSE, Timothy, W.; Gray Cary Ware & Freidenrich LLP, Patent Department, 400 Hamilton Avenue, Palo Alto, CA 94301-1825 (US).</p>		60/109,984	25 November 1998 (25.11.98)	US	09/419,129	15 October 1999 (15.10.99)	US	09/419,147	15 October 1999 (15.10.99)	US	09/419,312	15 October 1999 (15.10.99)	US	09/419,426	15 October 1999 (15.10.99)	US	<p>(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).</p> <p>Published <i>With international search report. Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i></p>	
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<p>(54) Title: ELECTRONIC INCENTIVE SYSTEM AND METHOD</p> <pre> graph TD PORTAL[PORTAL] -- 30 --> INCENTIVE[INCENTIVE GENERATOR] INCENTIVE -- 22 --> BRAND1[BRAND MANAGER] INCENTIVE -- 22 --> BRAND2[BRAND MANAGER] INCENTIVE -- 22 --> BRAND3[BRAND MANAGER] INCENTIVE -- 22 --> BRAND4[BRAND MANAGER] INCENTIVE -- 23 --> DATABASE[DATABASE] MERCHANT[MERCHANT] -- 26 --> INCENTIVE PORTAL -- 28 --> CONSUMER[CONSUMER] PORTAL -- 32 --> HOSTED[HOSTED MERCHANT SERVICE] HOSTED -- 34 --> INCENTIVE HOSTED -- 32 --> LARGE[LARGE MERCHANT STORE] LARGE -- 34 --> INCENTIVE LARGE -- 36 --> COMPARISON[COMPARISON SHOPPER SERVICE] COMPARISON -- 36 --> CONSUMER COMPARISON -- 36 --> INCENTIVE </pre>																		
<p>(57) Abstract</p> <p>An electronic incentive system (20) and method are provided which permits an incentive (27) to be distributed to a consumer (28) who is contemplating the purchase of a product. To accomplish this, the system generates brand preference records which are used to target a variety of different incentives to the consumer.</p>																		

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ELECTRONIC INCENTIVE SYSTEM AND METHOD

5

Background of the Invention

This invention relates generally to a system for electronically distributing
10 incentives, such as coupons, discounts, rebates and the like, and in particular to a
system and method for electronically distributing incentives to a consumer who is
considering the purchase of a product.

The use of incentives, such as coupons, began in 1894 when Coca-Cola enticed
15 consumers to try their new cola product with a free glass of cola by having the
consumer clip out a coupon and redeem it for a free glass of Coke. Incentives, such as
coupons and rebates, have a variety of different goals. For example, a coupon may
increase the sales of a product, may promote customer loyalty to the products,
encourage repeat purchases, increase product awareness, get the consumer to try a new
product or brand, launch marketing campaigns or soften the blow of a price increase.

20 There are many conventional systems for distributing coupons to a consumer.
Some methods involve blind marketing in which a large number of coupons for a

variety of products are sent to a plurality of households, such as newspaper coupons.

The problem with this method is that the coupons are not targeted to any particular audience or individual so that the advertiser is often spending large amounts of money with a low probability of obtaining a consumer response. There are also conventional

- 5 electronic coupon systems which use a coupon printing machine connected to a cash register in a store or supermarket to print targeted coupons for particular consumers based on a set of rules. The rules which determine which consumers get which coupons may be as simple as "if a particular consumer purchases a first product, then the customer will receive a coupon for a competing product". In operation, as each
- 10 consumer purchases products, the consumer's purchases are moved past a scanner which reads the universal product code (UPC) barcodes on the packaging. The output from the barcode scanner, which identifies each product, is fed into a computer which compares the barcode information to a database of rules and issues a coupon if there is a match in the database with the product. This system permits advertisers and
- 15 manufacturers to provide a coupon to the consumer only after the competing product has already been purchased. This system, however, does not permit the manufacturer to catch the consumer's attention prior to the actual purchase of the competing product so that the consumer does not have a chance to switch brands prior to purchasing the product. For a supermarket selling consumable groceries, a coupon delivered after
- 20 purchase is acceptable since the consumer will soon be back to purchase more consumable products and may use the coupon. However, for more expensive, non-consumable products, such as various consumer electronics products (e.g., automobiles

or furniture) the distribution of a brand switching coupon after the purchase of a competing product by a consumer is not acceptable since a consumer is not likely to purchase a similar product for a long time, and so the coupon is unlikely to influence the buying behavior of the recipient.

5 Therefore, it is desirable for a product manufacturer to be able to interactively provide a consumer, who is browsing through a number of products, with an incentive to buy the manufacturer's particular brand when the consumer has a number of different brand choices. In some market sectors, such as, for example, books or CDs, it is important for brand name merchants to be able to target the consumers in the same 10 way and offer incentives prior to purchase. No conventional systems provide a user, who is browsing for an item from among a group of items from different manufacturers and/or merchants, with an incentive to buy a particular brand as opposed to another brand. In addition, no conventional system permits a manufacturer to electronically catch the consumer's attention prior to the purchase of a product in order 15 to provide an incentive to the consumer to purchase a particular brand. Thus, it is desirable to provide an electronic incentive system and method, and it is to this end that the present invention is directed.

Summary of the Invention

In accordance with the invention, an electronic incentive system and method 20 are provided which deliver incentives, such as rebates, coupons, discounts and the like, to consumers while they are reviewing what to buy (i.e., prior to the sale as opposed to

after the sale has occurred). The system may be a web-based service which allows other shopping services such as merchants, comparison shopping sites, product review sites, hosted merchants services, and portals to offer incentives, coupons and rebates to consumers who visit their sites. The electronic incentive system may be a

5 clearinghouse for incentives by developing relationships with brand managers at product manufacturers who wish to promote their product brands as well as with merchants who wish to promote their storefronts. The electronic incentive system may therefore distribute a plurality of different incentives for different entities. In accordance with the invention, the system may electronically distribute incentives at

10 any location at which a consumer may shop for a product. These locations may include stores, World Wide Web-based comparison shopping sites, World Wide Web portals and other shopping and merchant services of all kinds.

As used herein, the term "brand" may encompass both a manufacturer's brand, such as Sony as well as a merchant's brand, such as Amazon.com. Thus, the electronic

15 incentive system may be used to generate and distribute manufacturer brand incentives to try to convince a consumer to switch manufacturer brands, such as from Sony to Panasonic. The electronic incentive system in accordance with the invention may also be used to generate and distribute merchant brand incentives to try to convince a consumer to switch sites at which to buy, for example, a book or CD, such as from

20 Amazon.com to barnesandnoble.com. Thus, when the term "brand" is used herein, it may apply to both manufacturer and merchant brands.

The system may be easily integrated into existing web sites and other shopping locations to permit existing shopping services to take advantage of the incentives. The system is transparent to the consumer in that the consumer browses through products as he normally would, but may receive an incentive in accordance with the invention.

5 To provide incentives to a consumer, the system may be implemented at any place where the consumer may be shopping for a particular product. The system may record the consumer's action to generate product and/or brand preferences for each consumer at a shopping location, request that an incentive be provided to the consumer, and determine an appropriate incentive for a particular consumer based on
10 the product or brand preferences. The system may also electronically redeem incentives given to a consumer.

To catch the consumer where the consumer is shopping for a product, the system may be integrated with a variety of different existing shopping services and systems through an embedded software application. For example, the system may
15 permit a consumer at home on the Internet to receive an incentive based upon the consumer's choice of product information and to later redeem an incentive based upon the consumer's product purchase. The system may also permit a consumer at a merchant's store to receive and redeem an incentive. For all of the shopping services and systems, incentives may be provided for a single merchant, multiple merchants, for
20 a single brand or for multiple brands depending on the needs for the particular shopping service. The system may also permit a consumer of a comparison shopping

site or portal site, such as Yahoo, to receive incentives based on the selection of product information or other product related actions. The system may also permit a consumer to receive and/or redeem an incentive at a product comparison review site, a consumer reports site, or at an Internet kiosk while the consumer is traveling or in a store. The entire electronic incentive system may also be stored on a CD with a catalog so that a consumer browsing the catalog on the CD may receive an incentive. Finally, the system may also operate through the interaction between a personal appliance, such as Palm Pilot, a cell phone, etc., and a store shelf.

The electronic incentive system and method may distribute and redeem a variety of different types of incentives. For example, the system may distribute an upsell incentive which is designed to encourage the consumer to spend more money on a more expensive, feature rich model of the same product, such as \$50 off if you buy the next model up, or a cross sell incentive designed to encourage the consumer to buy related items, such as buying a certain brand of television to go with the VCR which is going to be purchased shortly. In addition, the system may also distribute a brand switch incentive, such as 20% off if the consumer buy a particular brand of VCR rather than the VCR that the consumer is currently considering or a desperate measure incentive in which a manufacturer may offer a special one-time discount. The system may also distribute a fixed value discount coupon or a fixed percentage discount coupon which may include coupons which are printable and redeemable at the physical store, coupons which are transferred electronically to the physical store, crypto-objects which can be used at an Internet store, or hosted objects which can be used at an

Internet store. The system may also distribute fixed value or fixed percentage off rebates payable after purchase and these rebates may include rebates which are sent via electronic means such as e-mail to the consumer, rebates which are printable and which can be returned to a redemption center, rebates which can be returned on-line by 5 electronic means and rebates which can be redeemed automatically by transaction filters at merchants and transaction acquirers. In addition, the system may also distribute points-based incentives including a fixed allocation of points for a particular purchase, or bonus points for a particular purchase.

Brief Description of the Drawings

10 Figure 1 is a block diagram illustrating an electronic incentive system in accordance with the invention;

Figure 2 is a block diagram illustrating more details of the electronic incentive system of Figure 1;

15 Figure 3 is a block diagram illustrating a second embodiment of the electronic incentive system in accordance with the invention;

Figure 4 is a block diagram illustrating a third embodiment of the electronic incentive system in accordance with the invention;

20 Figure 5 is a block diagram illustrating an example of an existing comparison shopping system which may incorporate the electronic incentive system in accordance with the invention;

Figure 6 is a block diagram illustrating an example of a brand incentive system which may incorporate the electronic incentive system in accordance with the invention;

Figure 7 is a block diagram illustrating an example of a merchant incentive system which may incorporate the electronic incentive system in accordance with the invention;

Figure 8 is a block diagram illustrating an example of a comparison shopping system in accordance with the invention;

Figure 9 is a block diagram illustrating an example of an incentive promotions system in accordance with the invention;

Figure 10 is a block diagram illustrating an example of an incentive promotions/comparison shopping system in accordance with the invention;

Figure 11 is a flowchart illustrating an example of a method for electronic incentive distribution in accordance with the invention;

Figure 12 is flowchart illustrating an example of a method for recording a consumer's preference;

Figure 13 is a diagram illustrating the display on a consumer's browser application when viewing a comparison shopping site;

Figure 14 is flowchart illustrating an example of a method for requesting an incentive;

Figure 15 is flowchart illustrating an example of a method for determining an incentive to deliver to a consumer;

Figures 16A - 16I are diagrams illustrating examples of web pages displayed by a consumer's browser application as the consumer browses a comparison shopping site and receives an incentive in accordance with the invention; and

Figures 17A - 17H are diagrams illustrating examples of web pages displayed by 5 by a consumer's browser application as the consumer browses a product review site and receives an incentive in accordance with the invention.

Detailed Description of a Preferred Embodiment

The invention is particularly applicable to a World Wide Web-based electronic 10 incentive system and it is in this context that the invention will be described. It will be appreciated, however, that the system and method in accordance with the invention has greater utility.

A first embodiment of the system in accordance with the invention is a World 15 Wide Web (WWW) based incentive generator which allows existing shopping services such as merchants, comparison shopping sites, product review sites, hosted merchant services, and WWW portals to offer incentives to consumers who visit their WWW sites shopping for a particular product. The system may distribute incentives everywhere a consumer goes shopping including, for example, retail stores, other 20 physical stores, portals and other shopping and merchant services of all kinds. Now, the system in accordance with the invention will be described.

Figure 1 is a block diagram illustrating an electronic incentive system 20 in accordance with the invention. Although the portions of the system 20 will be described here as being connected together by the Internet through the WWW, the system 20 may also be connected together by a variety of other different communications networks, such as, for example, a dedicated local computer network, telephone lines and modems, or a wireless network. The system 20 may include an incentive generator 22 which receives data from a variety of different entities which may desire to provide consumers with an incentive to buy their particular brand of product. For example, as shown in Figure 1, there may be one or more brand managers 5 and one or more merchants 26. The brand managers may be an organization or person who handles the promotions and sales for a particular product line or a particular product. The brand managers and/or merchants may provide the incentive generator 22 with information about the available incentives for a particular merchant or brand manager. For example, this would include information about which 10 products, which brands, type and amount of incentive, the rules for creating and assigning incentives. The incentive generator 22 may use this information from the brand managers and/or merchants to distribute incentives to consumers in accordance with the invention. The incentive generator 22 may also receive incentive information from a variety of other entities, such as manufacturers. The incentive generator 22 may 15 be a group of software applications being executed by a computer system, such as a server, and a database 23 associated with the server for storing various information required by the incentive generator 22. For example, the incentive generator 22 may 20

provide a user interface screen to each brand manager and/or merchant so that these entities may enter the relevant incentive information into the incentive service database 23.

Once the incentive generator 22 has received the incentive information from the 5 brand managers and/or merchants, it may distribute incentives 27 to consumers 28 through a variety of different shopping forums and sites. For example, as shown in Figure 1, the shopping forums may include a WWW portal 30, a hosted merchant service 32, a large merchant store 34 and a comparison shopping service 36. As the consumer interacts with these shopping forums and makes product selection and 10 product choices, the incentive generator 22 may record the preferences of the consumer and distribute an incentive to the consumer based on the preferences of the consumer and the rules of the appropriate incentive campaign. For example, if the consumer has chosen a particular brand of television and the incentive generator 22 has received information from a brand manager for a different brand of television who wants to 15 provide an incentive to buy his brand of television, then the incentive generator 22 may note the brand preference of the consumer and provide the consumer with an incentive to choose the other brand of television. The incentive campaign, in this example, may implement a simple rule, which always assigns the same incentive to a consumer searching within this category. However, the campaign rules may also be more 20 complex where the amount of the incentives created and assigned by the service could depend on the brand identity and other parameters collected which indicate the degree of consumer preference.

The incentive generator 22 may distribute a variety of different incentives which may include an upsell incentive which is designed to encourage the consumer to spend more money on a more feature rich model of the same product, such as \$50 off if you buy the next model up or a cross sell incentive designed to encourage the

5 consumer to buy related items, such as buying a certain brand of television to go with the VCR which is going to be purchased shortly. The incentive generator 22 may also distribute a brand switch incentive, such as 20% off if the consumer buy a particular brand of VCR rather than the VCR that the consumer is currently considering or a desperate measure incentive in which a manufacturer may offer a special one-time

10 special. The incentive generator 22 may also distribute a fixed value discount coupon or a fixed percentage discount coupon which may include coupons which are printable and redeemable at the physical store, coupons which are transferred electronically to the physical store, crypto objects which can be used at an Internet store, or hosted objects which can be used at an Internet store. The incentive generator 22 may also

15 distribute fixed value or fixed percentage off rebates payable after purchase and these rebates may be e-mailed to the consumer or points-based incentive schemes including a fixed allocation of points for a particular purchase or double points for a particular purchase. The electronic incentive system may also redeem coupons or rebates as described below. Now, more details of a first embodiment of the electronic incentive

20 system will be described.

Figure 2 is a block diagram illustrating more details of the electronic incentive system 20 in accordance with the invention. In particular, the electronic incentive system may include the incentive generator 22 and the database 23 as described above. In addition, the electronic incentive system 20 may also include a preference detector 37, which may be a piece of software code being executed by a computer system at some location between the incentive generator 22 and the incentive distribution site, which may be a consumer shopping service 36 or a portal 30. The preference detector 37 may be resident on and executed by a processor on an incentive distribution site, such as a shopping service, but may also be located at a secondary service remotely 10 located from the incentive distribution site. Thus, the actual location of the preference detector system 37 is not critical to the invention since the preference detector system 37 may be located in a variety of locations.

In operation, events (e.g., actions and behaviors of a consumer) will occur on the incentive distribution site and the site will send the event information (i.e., the 15 action and the result of the action) to the preference detector system 37. For example, the event information may be the search performed and the search results returned for a search conducted by a search engine at a portal site since this information may be used to generate brand preference records as described below. The preference detector system 38 may receive the event information and generate a brand preference record, 20 as described below, based on the event information. The brand preference records may be forwarded on to the incentive generator 22, which may determine an appropriate

incentive to distribute to the consumer based on the brand preference record as described below. The preference detector 37 may send messages to the incentive generator 22 in a variety of different manners, such as over the Internet, between co-located computers, or between processes in the same software application depending 5 on the actual location of the preference detector 37. The incentive generator may then send the appropriate incentive 27 back through the preference detector 37 to the site 30, 36 so that the site may display the appropriate graphic, banner or the like, to alert the consumer to the incentive being offered.

The incentive generator 22 may be co-located at the incentive service site, such 10 as a shopping service site, or with a secondary service with or without the brand detector software. The preference detector 37, with or without the incentive generator 22, may also be located in a piece of consumer software at a browser, in a TV cable box, inside a personal appliance, such as a PDA or cell phone, or in a device attached to a supermarket or retail store shelf. The incentive generator 22 and the preference 15 detector 37 may also be software applications installed on a CD-ROM and these software applications may be executed by a consumer's home personal computer. Thus, although the incentive generator 22 in Figure 2 is portrayed as being remote from the brand detector software, there may be sound technology and business reasons to co-locate the preference detector 37 and incentive generator along with busy 20 consumer sites, such as a portal or a comparison shopping system. Now, another embodiment of the electronic incentive system will be described.

Figure 3 is a block diagram illustrating another embodiment of the electronic incentive system 20 in which the incentive generator 22 and the preference detector 37 may be integrated into an incentive distribution site, such as a consumer shopping service 30, 36, with a minimum amount of disturbance to their site. For this embodiment, like reference numerals refer to like systems which will not be described here. To accomplish the easy integration, the preference detector 37 may be separated into a preference detector 37 and an event preprocessor 38 which is attached to an event to brand translation database 39. The event preprocessor, using the database 39, may receive incoming event information from the site and generate brand information based on the event information. For example, the pre-processor 38 may be a simple look-up table where event information, such as predetermined universal resource locators (URLs) visited by the consumer, are translated into brand information. This embodiment may work well in a product review site wherein the pages are product reviews from a magazine but published on-line. In this embodiment, the database 39 may contain a series of records of the form: URL, n, ((b₁,\$1),(b₂,\$2)...(b_n,\$n)) where n is the number of brands appearing on the page, b_i is the name of brand i, and \$i is the value of the products being described for that brand.

In an example of an incentive distribution site, such as a product review site, as described below with reference to Figures 17A-17H, at which a consumer may be browsing for a scanner, the database 39 may look like:

/scanners98/edchoice.html	3,(HP,400),(Visioneer,200),(Epson,700))
/scanners98/rev7.html	1,(HP,600)

/scanners98/rev17.html 1,(Visioneer,200)

In this example, every product review page could have a reference to one or more brands. Then, every time the consumer goes to a new page, the product review site may generate event information, such as (Current URL, Next URL, TimeStamp, 5 User Cookie Reference). The preprocessor 38 may then translate the URL references in the event information into brand information events and the preference detector 37 may then review the sequence of brand information events for a given consumer and create the appropriate brand preference record resulting in an incentive delivery in the method previously described.

10 In a variation of the second embodiment of the invention in which URL information may be used to determine a brand preference, the brand preference detector 37 may be a client software application which may be, for example, executed by the consumer's personal computer outside of the consumer's browser, or executed within the browser application since it may be a signed Java applet, an ActiveX control 15 or a plug-in. For a consumer, the preference detector 37 may then become a shopping assistance tool which may monitor the current URL of the browser and display incentive information in a separate window as products are displayed with associated incentives. For example, when the consumer activates the preference detector 37 and begins shopping for a color printer, the preference detector 37 may display incentives 20 to the consumer if the merchant, manufacturer, comparison shopping, or consumer reports sites are recognized by the detector. For instance, if the consumer visits NECX for a printer, the preference detector 37 may display a rebate coupon from the category

owner in a separate window next to the browser or as a separate frame within the browser. Now, a third embodiment of the invention will be described.

Figure 4 is a block diagram illustrating a third embodiment of the electronic incentive system which may be referred to as a retail store system 40. The retail store system 40 may include the preference detector 37, the event to brand translation database 39, the incentive generator 22 and the database 23 as described above. In this embodiment, the preference detector 37, the database 39, the incentive generator 22 and its associated database 23 may be co-located together at some location which is remote to a handheld digital device 42 which a consumer may bring into a retail store, for example, to obtain incentives based upon the consumer's browsing in the retail store. The handheld digital device or appliance may be, for example, a Palm Computing Palm III device with a wireless modem attached. Thus, the consumer carries the digital appliance that is connected through an infrared (IR), radio or cellular link, such as the wireless modem, to a network which provides product or shopping services. As the consumer walks through the store, merchandise and products of various brands are presented to the consumer. In the simplest incentive distribution case, the consumer may enter a product identification information, such as SKU number, product and brand name etc., into the digital appliance in order to possibly receive product, pricing information or an incentive. In a more elaborate embodiment, the digital appliance 42 may include a barcode scanner, which may be used to scan the barcodes on product cartons, in order to obtain product identity information which may

then be used for requesting product information or for determining an appropriate incentive. In yet another more elaborate embodiment, the digital appliance 42 may be pointed at the retail store shelf at a particular location so that various product information may be uploaded electronically into the digital appliance 42 so that

5 product information may be requested or an appropriate incentive may be distributed.

Once the product information is received by the digital appliance 42, the digital appliance 42 may then communicate with a shopping service or product service to retrieve additional information about that product. The additional information may include, for example, references to a manufacturer's recommended price, street price

10 information, and summaries of product reviews which may, for example, indicate the value of the product or the reliability of the product being displayed. Each time a consumer takes an action which results in product information being loaded into the appliance, a consumer event may be recorded and a series of these consumer events may result in the generation of brand preference records on the appliance with an

15 integrated brand preference detector 37 or on a connected but remote shopping service with the brand preference detector 37. Then, as described below in more detail, it is possible to distribute an incentive to the consumer based on the brand preference records. In a variation of this retail store embodiment, an appropriate incentive, as determined by the incentive generator 22, may be downloaded electronically into the

20 digital appliance for use during the checkout process in the retail store. Now, an example of a process which may be carried out on the brand preference records and data stored in the electronic incentive system will be described.

The preference detector 37 collects a consumer's information such as interested products, preferred brand(s), price range and favorite merchant(s) for a particular product group. By storing this information in a central database, the electronic incentive system may perform well-known data mining processes on the information

5 collected over a period of time. The data mining results may be organized in a variety of different reports for manufacturers, merchants and/or consumers. An example of a report may be a report which lists the brand preferences of consumers in a product category and sub-category (e.g., 56% of all consumers prefer Sony in the consumer electronics category and 23% prefer Sony in the TV sub-category). Other examples

10 are a report about the price preference of consumers in a particular product sub-category (e.g., 60% of consumers prefers TV in the range of \$300-\$500). Another example is a report about the preferred merchants for consumers in a particular product category and sub-category (e.g., 70% of consumers shops with Crutchfield when buying consumer electronics) or a report about the effectiveness of a promotion (e.g.,

15 the number of incentives presented to consumers vs. the number of incentives that actually get redeemed). Another more complex example of a report would be an analysis of preference patterns at comparison shopping sites and a measuring of the effectiveness of various banner ad campaigns and incentive campaigns in changing these preference patterns.

20 Once the data mining has been performed, these reports, for manufacturers, may provide the manufacturers with better control of allocating the promotions budget so that the manufacturer may, for example, concentrate promotions on the most

popular site of a product category. In addition, mailing lists may be generated for targeting specific groups of an audience. For merchants, the reports may provide better inventory control due to the brand preference information or permit the merchants to perform competitive analysis. For example, Circuit City may want to

5 find out why most consumers buy from Crutchfield on consumer electronics products.

The information may also be used to generate merchant mailing lists for targeting specific groups of audience. For consumers, the information may permit the consumer to find out which are the popular merchants for a particular product category or sub-category so that the consumer may buy with confidence from those merchants.

10 In addition to the embodiments described, the electronic incentive system may

also be used to generate and distribute merchant brand incentives. This may typically occur in markets in which products, such as books or CDs for example, may be purchased from various different merchants and a particular merchant wants to try to convince a consumer to buy the product from their site instead of the competing site.

15 Now, an example of an incentive service which incorporates the incentive generator in accordance with the invention will be described.

Figure 5 is a block diagram illustrating an example of an incentive service 46 which may incorporate the incentive generator 22 in accordance with the invention. As shown, the service 46 may be accessed by a consumer who is, for example, using a 20 conventional WWW browser software application 47 to access information at the comparison shopping site 36 through a portal site 30. To capture the preferences of the

consumer at the comparison shopping site and to distribute the incentives to the consumer, the incentive generator 22 may include a software application 48, such as a preference detector, embedded within the portal 30. The software application 48 permits a variety of different web-based services to incorporate the electronic incentive system in accordance with the invention. The software application 44 may provide a secure communication channel with the incentive generator 22 over the Internet. As is typical, the portal 30 may be connected to the comparison shopping service 36 which is in turn connected to one or more store search interfaces 49. As shown in Figure 2, the electronic incentive system in accordance with the invention may be easily integrated into an existing service.

In operation, when the consumer accesses the comparison shopping site and selects a particular product, the comparison shopping service uses the store search interfaces 46 to access information (e.g., price, brand and features) about the products in which the consumer is interested. Once the consumer selects one or more particular brands of the product, the consumer is shown more details about these selections and information about the selections are also communicated back to the incentive generator 22 by the software application 48 so that the incentive generator can determine whether or not an incentive should be issued to the consumer. For example, if the consumer selects a single brand and the incentive generator can only offer incentives for that brand, the incentive generator may not issue any incentive since the consumer is already interested in the brand with an incentive. On the other hand, if the consumer has selected 5 different brands, none of which are the brand with an

incentive, the incentive generator 22 may distribute a large incentive to the consumer in an attempt to convince the consumer to change brands. Thus, in accordance with the invention, the level of incentive provided to a consumer (e.g., from no incentive to a high incentive) varies depending upon the consumer's selections. In the context of the 5 WWW-based system, the incentive may be a banner which indicates to the consumer that the consumer may receive an incentive, such as, for example, a discount of 30% for purchasing a particular brand. Now, an example of the electronic incentive system incorporated into a brand incentive service will be described.

Figure 6 is a block diagram illustrating an example of a brand incentive system 10 50 which may incorporate the electronic incentive system 20 in accordance with the invention. In the brand incentive system, sales managers may assign rules and parameters for incentive creation and delivery to each product category so that the incentive generator may determine the level of incentives distributed to each consumer. Thus, the brand incentive system may include the comparison shopping service 36 15 which includes the integrated software application 48 which records the brand preferences of consumers at the comparison shopping service and communicates the preferences back to the incentive generator 22. The incentive generator 22 then determines the incentive which may be provided to the consumer as described above. To permit a sales manager to enter information about an incentive for a particular 20 product in a particular category, the system 50 may include a sales manager browser application 52 which may be connected, via the Internet, to a manufacturer interface 54. The manufacturer interface provides the manager with an interface to provide

information about the incentive program for a particular product or product category. In particular, the sales manager may specify a set of price adjustments, coupons and special offers that can be highly targeted to a particular consumer since the targeted consumers are those consumers who are identified to be buying in the required sub-
5 category by the software application 48.

The incentive information entered by the sales manager for a particular brand may be stored in a brand incentive database 56 using a brand database interface 58. As described above, the degree or amount of the incentive or offer given to a particular consumer may be adjusted according to the degree of interest that the consumer has
10 expressed in the brand or merchant during the comparative shopping process. To determine the actual incentive distributed to a particular consumer, an incentive assignment engine 60 is connected to the incentive generator 22 and the brand incentive database 56. The incentive assignment engine may be a rules based search engine which, based upon the preferences of the consumer as recorded by the software
15 application 48, and based on the rules applied for the product category recorded by the manufacturer's interface 54 determines the appropriate type and amount of incentive for a particular consumer. Thus, the incentive assignment engine permits a large amount of flexibility in matching incentives with consumer behavior. The incentive generator 22 may or may not distribute an incentive to the consumer as determined by
20 the Incentive Assignment Engine 60. Using the brand incentive system 50, a brand manager or sales manager may enter incentive programs into the brand incentive database 56 for a particular product category. In a brand switching campaign, when a

different brand from the same product category is selected by a consumer, the incentive generator 22 may offer an incentive to the consumer to select the brand owned by the particular sales manager. In an upsell campaign, the incentive generator 22 may issue an incentive to the consumer even when he has selected the preferred brand. In a cross sell campaign, the incentive generator 22 may issue an incentive for related items. 5 Thus, a brand manager or sales manager may have incentives for its products distributed by the electronic incentive system in accordance with the invention. Now, a merchant incentive system which incorporates the electronic incentive system will be described.

10 Figure 7 is a block diagram illustrating an example of a merchant incentive system 70 which may incorporate the electronic incentive system in accordance with the invention and permits, for example, a merchant to distribute incentives to a consumer of a comparison shopping service 36. To permit the merchant to provide incentive program information for one or more products to the incentive generator 22, 15 the system 70 may include a merchant browser software application 72 which interfaces with a merchant interface 74. The merchant interface may permit the merchant to enter incentive program information, such as a set of price adjustments, coupons and special offers, that can be highly targeted to a particular consumer since the targeted consumers are those consumers who are identified to be buying in the 20 required sub-category by the software application 48. The incentive program information may be stored in a merchant incentive database 76 using a merchant database interface 78. As with the system described in Figure 6, the merchant

incentive database information may be searched by the incentive assignment engine 60 which determines the appropriate incentive to distribute to a particular consumer based on the preferences of the consumer. Using this system, a merchant may provide, for example, discounted prices on a particular product or other merchant incentives. Now, 5 a comparison shopping system which incorporates the electronic incentive system will be described.

Figure 8 is a block diagram illustrating an example of a comparison shopping system 80 in accordance with the invention. As shown, the comparison shopping system 80 may include a WWW site 82 which includes one or more services, such as a 10 merchant self-serve service 84, a comparison shopping service 86 and a service administrator service 88. Each of these services may be accessed over the Internet by the appropriate person through one or more browser software applications, such as a merchant browser 90, a consumer browser 92 and a service manager browser 94. Thus, a merchant may add, remove, change an incentive program or add special 15 discount offers not covered by the incentive generator using the merchant self-serve service 84, a consumer may browse for a product and possibly receive an incentive using the comparison shopping service 86 and a service manager may ensure that the site 82 is properly functioning using the service administrator service 88. To permit the operation of the site 82 to be monitored and to permit billing to occur, the merchant 20 self-serve service 84 and the comparison shopping service 86 may be connected to the service administration service 88. To accomplish billing and tracking of preferences, the service administrator 88 may be connected to a billing and logging database 96.

To accomplish the addition, removal or updating of an incentive program by the merchant or to permit the merchant to view other products, the merchant self-serve service 84 may be connected to a database interface 98 which is in turn connected to a self-serve search catalog 100. To permit comparison shopping, the comparison 5 shopping service 86 may be connected to the database interface 98 and to one or more merchant stores 102. The merchant stores may include a store search interface 104 and a web store 106. To log and bill for products bought from the merchant store, the merchant store is connected to the billing and logging database 96. Using this system 80, a variety of different people may seamlessly access the services of the comparison 10 shopping service integrated with the electronic incentive system. Now, an incentive promotions systems will be described.

Figure 9 is a block diagram illustrating an example of an incentive promotions system 110 in accordance with the invention. The system 110 may include a comparison shopping site 112 which a consumer may access through the Internet using 15 a browser software application 114. When the consumer accesses a particular category of products, a webstore 116 may be searched and send data back to the comparison shopper containing information about the category of products. As the consumer selects a particular brand or product, a self-serve search catalog 118 may search for item price links to the product to determine the price of the product. The information 20 about a consumer's search for a particular product or brand may also be forwarded to an electronic incentive system 120. The electronic incentive system 120 may include an incentive engine 122 which determines whether or not an incentive is going to be

distributed to the consumer based on the consumer's preferences. To determine if an incentive is going to be distributed, the incentive engine 122 may compare an item price link to an offer database (DB) 124 and issue a incentive, such as a coupon 126 or a rebate 128 if a match occurs as described below in more detail. The coupon or rebate 5 may be forwarded onto the web store 116 so that the incentive may be applied to the consumer's purchase. Various information about each transaction, such as the consumer's identification, his products choices, the incentive distributed, etc., may be stored in a transaction log database 130. The information in the transaction log database may be used for end of the day processing and for coupon and rebate 10 processing. Thus, as shown, the electronic incentive system in accordance with the invention may be integrated seamlessly into a comparison shopping system. Now, a system which includes both comparison shopping and incentive promotions in accordance with the invention will be described.

Figure 10 is a block diagram illustrating an example of an incentive 15 promotions/comparison shopping system 140 in accordance with the invention. In this example, both a consumer and a merchant may access various services using, for example, a conventional browser application 142, 144 over the Internet. The user interface provided to the consumer and the merchant, however, may vary depending on the needs of the consumer and the merchant. Both browsers may connect to a web site 20 146 which may include a comparison shopping service 148 which the consumer accesses and a merchant self-serve service 150 which the merchant accesses. To perform the comparison shopping functions, the comparison shopping service 148 may

be connected to a webstore 152, a merchant comparison shopping website 154, such as JungleE, and a price self-search database 156. The comparison shopping website 154 may be further connected to one or more webstores 158, 160 from which product information and pricing is obtained .

5 Any time that the consumer selects particular brands from a group of brands, the preference detector software application which is integrated into the website 146, as described above, records the consumer's brand preferences which may be used to determine an appropriate incentive to distribute to the consumer as described below. The software which performs the brand preference recording is the brand preference 10 detector. Thus, the consumer's search results are fed into an incentive site 162 which may include an incentive engine for determining an appropriate incentive, if any, to distribute to a particular consumer. To determine an appropriate incentive, the incentive engine may compare the brand preferences of the consumer to an offer database (DB) 164 and a particular incentive, such as a coupon, may be selected if 15 there is a match between the brand preference and an offer in the offer DB. The other manner in which an incentive may be selected is for the incentive site 162 to forward the brand preference information to an associated webstore 166 which may then return an incentive, such as a rebate, to the incentive engine. For example, when a customer selects a particular brand, the webstore 166 may have a chance to convince the 20 consumer that the product should be purchased from his website by offering a rebate. In addition to selecting an appropriate incentive, the incentive site 162 may also generate transactions records which may be stored in a transaction log database 168.

The information in the transaction log database may be used for end of the day processing and coupon/rebate processing. Now, the overall method for distributing an incentive to a consumer in accordance with the invention will be described.

Figure 11 is a flowchart illustrating an example of a method 180 for electronic incentive distribution for a particular consumer in accordance with the invention. As described above, the method 180 distributes an incentive to the consumer prior to the consumer making a purchase to entice the consumer to switch brands, for example. The steps of this method are carried out by systems and software applications located at various different locations. In step 182, as a consumer browses through products on an incentive distribution site, such as a comparison shopping site, or any other site, a consumer's preferences are recorded by a software application. The process for recording the brand preferences of the consumer will be described below with reference to Figure 12.

The brand preference information about the particular consumer is then transferred to a brand preference detector software application at the incentive distribution site which generates the brand preference record(s) as described below. The brand preference detector then requests an incentive from the incentive site by communicating the brand preference records to the incentive site in step 184. The incentive site, in step 186, determines and selects an appropriate incentive to distribute to the particular consumer based on the recorded consumer brand preference information. In step 188, the selected incentive may be communicated back to the

incentive distribution site, and the incentive is distributed to the consumer. For example, once an incentive has been selected, a banner advertisement with the incentive may pop up on the web page currently being viewed by the consumer using browser software or a selectable graphic or hypertext link may appear on the web page

5 next to the brand which is offering the consumer an incentive. The method may also support the redemption of the incentives by, for example, sending an e-mail to the consumer with the rebate which may be printed, filled out and sent in by the consumer or by adjusting the price of the product based on the incentive at check-out. The method for electronically distributing an incentive has now been completed. Now, a

10 method for recording the preferences of a consumer will be described.

Figure 12 is flowchart illustrating an example of a method 190 for recording a consumer's preference in accordance with the invention. As described above, a software application which may be integrated into an incentive distribution site monitors/observes a consumer's behavior at one or more incentive distribution sites, such as Internet web sites. The incentive generator may then use this recorded consumer behavior to assign a corresponding numerical value that enables the incentive system to determine the probability of a particular brand selection in a subsequent purchase. The probability may be used to determine an appropriate incentive, if any, to distribute to the consumer.

20 There are several types of consumer behaviors that may be monitored in this way. Each type of monitored consumer behavior may generate a brand preference

record, which is then subsequently transmitted to the incentive service. This record may be transmitted along with a request for an incentive or may be sent independently.

In one embodiment of the invention, a cookie may be placed in the consumer's browser software application to establish a common thread to track a consumer

5 through a series of linked sites and operations. At each site or operation, a preference record for the consumer may be generated so the incentive system builds up an increasingly accurate picture of the consumer's desires and preferences.

To record a consumer's preferences, in step 192, the software application may gather information about a consumer's behaviors and brand preferences based on the 10 actions of the consumer. Several examples of the recording of the preferences of the consumer will be described below. Once the preferences of the consumer are recorded, a preference record is generated in step 194 which contains all of the preferences chosen during a particular shopping session. For each additional shopping session at the same site or a different site, another preference record may be generated to produce 15 an accurate picture of the preferences of a consumer. Now, several examples of the recording of the preference information and the generating of the preference record will be provided to help in understanding the process.

For this example, the recording of preference information during a comparison shopping site transaction will be described. In a comparison shopping site, for 20 example, the consumer may initially selects a product category (such as consumer electronics), a product sub category (such as digital video disk (DVD) players) and

possibly other additional selection criteria depending on the particular shopping site in question. The consumer may then activate a search through one or more merchant sites to obtain additional product related information about a particular product, such as a product brand, a model or item number, a price, a link to product reviews, a link to product descriptions, or a link to the webstore's check-out system for purchase of a particular product.

In one embodiment of the invention, the process of recording the preference of a consumer may be divided into a 2 stage process where the consumer is first given a list of product information, such as a product brand, a model or item number and a price (the 1st round viewing). The consumer is then asked to identify products, from the list, which are of further interest to him (the 2nd round viewing) before receiving the additional product information, such as a link to product reviews, a link to product descriptions or a link to the webstore check-out system for purchase of the particular product.

The objective is to collect quantitative information about the brands being presented to the consumer and then to measure how the consumer defines/chooses a preferred subset of these brands. To estimate the likelihood that the consumer will choose a particular brand, a variety of consumer information may be collected. For example, the method may record the following information:

N = the total number of items selected for the 1st round viewing
 n = a total number of brands available for 1st round viewing
 b_1, b_2, \dots, b_n = a label for each brand
 n_2 = total number of brands selected in 2nd round viewing

C = sum of purchase price of all items selected for 2nd round viewing.

R = sum of purchase price of all items present in 1st round

M_b_n = total number of items of brand b selected for 2nd round viewing (this value may be 0 if the brand is not selected)

5 Nb_n = total number of items of brand b present in 1st round.

C_b_n = sum of sale price of all items of brand b selected for 2nd round viewing (this value may also be 0 if the brand is not selected)

R_b_n = sum of sale price of all items of brand b present in 1st round

The result of this process is a brand preference record. A brand preference

10 record may consist of, for example, the following data structure:

(N, n, n2, C, R,
(b₁, Mb₁, Nb₁, C_b₁, R_b₁),
(b₂, Mb₂, Nb₂, C_b₂, R_b₂) ...
(b_n, Mb_n, Nb_n, C_b_n, R_b_n)).

15 This brand preference record is the key component in the "request for an incentive" method as described below. Now, several examples of actual brand preference records which may be generated will be described in which different consumer behavior may generate different brand preference records.

Figure 13 is a screen shot showing a consumer's browser application currently viewing a typical comparison shopping site web page which may display one or more product descriptions which may include, for example, a brand, a model section, a store that is selling the brand and the price of the brand. In this particular example, the consumer is interested in a video equipment product category and in a DVD product sub-category so the web page displays a number of different DVD players for the consumer to review and possibly select. This screen would represent the first round viewing, as described above, in which the consumer selects the brands which he is interested in to get more information about the particular brand or brands. For

purposes of the examples here, assume that there are a total of fifteen DVD players listed (although not all of them are currently being viewed) and assume that one of the DVD players not shown is made by Pioneer. As shown by the brand preference record below there may be five Sony models, five Toshiba models, two Pioneer models, and

5 three Panasonic models.

If the consumer only selects the DVP-S3000 Sony model from the list, then the resultant brand preference record may look like:

15, 4, 1, 449.95, 8147.75	(N, n, n2, C, R)
Sony,1, 5, 449.95, 3077.95	(b ₁ , Mb ₁ , Nb ₁ , Cb ₁ , Rb ₁)
10 Toshiba,0, 5, 0.0, 2399.85	(b ₂ , Mb ₂ , Nb ₂ , Cb ₂ , Rb ₂) ...
Pioneer,0, 2, 0.0, 1310.00	(b _{n-1} , Mb _{n-1} , Nb _{n-1} , Cb _{n-1} , Rb _{n-1})
Panasonic,0, 3, 0.0, 1359.95	(b _n , Mb _n , Nb _n , Cb _n , Rb _n)

If, on the other hand, the consumer selects a Toshiba and a Panasonic DVD

15 player from the list of fifteen DVD players displayed, the resultant brand preference record may look like:

15, 4, 2, 879.90, 8147.75	(N, n, n2, C, R)
Sony, 0, 5, 0.0, 3077.95	(b ₁ , Mb ₁ , Nb ₁ , Cb ₁ , Rb ₁)
20 Toshiba,1, 5, 359.95, 2399.85	(b ₂ , Mb ₂ , Nb ₂ , Cb ₂ , Rb ₂) ...
Pioneer,0, 2, 0.0, 1310.00	(b _{n-1} , Mb _{n-1} , Nb _{n-1} , Cb _{n-1} , Rb _{n-1})
Panasonic,1, 3, 519.95, 1359.95	(b _n , Mb _n , Nb _n , Cb _n , Rb _n)

Finally, if the consumer selects three DVD players which include one Sony,

25 one Toshiba and one Panasonic, the resultant brand preference record may be:

15, 4, 3, 1329.85, 8147.75	(N, n, n2, C, R,
Sony, 1, 5, 449.95, 3077.95	(b ₁ , Mb ₁ , Nb ₁ , Cb ₁ , Rb ₁)
Toshiba, 1, 5, 359.95, 2399.85	(b ₂ , Mb ₂ , Nb ₂ , Cb ₂ , Rb ₂) ...
5 Pioneer, 0, 2, 0.0, 1310.00	(b _{n-1} , Mb _{n-1} , Nb _{n-1} , Cb _{n-1} , Rb _{n-1})
Panasonic, 1, 3, 519.95, 1359.95	(b _n , Mb _n , Nb _n , Cb _n , Rb _n))

In another embodiment of the invention, instead of providing a first and second viewing of the products as described above, the brand preference detector method may 10 track visits to web sites external to the current incentive distribution site, such as the comparison shopping site in these examples. Therefore, the consumer preference detector software performs a simpler task, and the electronic incentive system and method in accordance with the invention may rely upon multiple consecutive brand preference records of the same type to determine the consumer's preference. In this 15 embodiment, the impact to the consumer flow at a comparison shopping network is minimized while permitting the monitoring of flow into and out of the comparison shopping service to different stores and other sites.

In this embodiment, the 1st stage viewing shows the consumer a complete set of 20 information displayed to the consumer and the consumer can chose immediately to jump out to a store or product description. In this case, we treat the consumer as if he decided on this one item as his single choice for a second stage and create the appropriate brand preference record as described above. By placing a cookie in the browser, it is possible to track a series of such actions in cases where the consumer moves in and out of the comparison shopping service and generate a brand preference 25 record for each action.

Another method may be to combine the successive brand preference records into a single brand preference record by treating each selection and jump out to a product site as if it was a single entry in the 2nd round viewing of the previous section. Therefore, if a consumer jumped out first to the product site for the 1st Toshiba choice, 5 and then out to the product site for the 1st Panasonic choice, the separate brand preference records and then the combined brand preference record are set forth below. After the consumer jumps to the product site for the Toshiba DVD, the brand preference record may be:

10	15, 4, 1, 359.95, 8147.75	(N, n, n2, C, R)
	Sony, 0, 5, 0.0, 3077.95	(b ₁ , Mb ₁ , Nb ₁ , Cb ₁ , Rb ₁)
	Toshiba, 1, 5, 359.95, 2399.85	(b ₂ , Mb ₂ , Nb ₂ , Cb ₂ , Rb ₂) ...
	Pioneer, 0, 2, 0.0, 1310.00	(b _{n-1} , Mb _{n-1} , Nb _{n-1} , Cb _{n-1} , Rb _{n-1})
	Panasonic, 0, 3, 0.0, 1350.95	(b _n , Mb _n , Nb _n , Cb _n , Rb _n))

After the consumer jumps to the Panasonic product site, the brand preference 15 record may be:

15	15, 4, 1, 519.95, 8147.75	(N, n, n2, C, R)
	Sony, 0, 5, 0.0, 3077.95	(b ₁ , Mb ₁ , Nb ₁ , Cb ₁ , Rb ₁)
	Toshiba, 0, 5, 0.0, 2399.85	(b ₂ , Mb ₂ , Nb ₂ , Cb ₂ , Rb ₂) ...
	Pioneer, 0, 2, 0.0, 1310.00	(b _{n-1} , Mb _{n-1} , Nb _{n-1} , Cb _{n-1} , Rb _{n-1})
	Panasonic, 1, 3, 519.95, 1359.95	(b _n , Mb _n , Nb _n , Cb _n , Rb _n))

Combining the two above brand preference records in accordance with this embodiment of the invention would result in a brand reference record identical to the 25 one generated when both the Toshiba and Panasonic products are selected to be viewed by the user. This method has the advantage of allowing the normal consumer shopping flow to take place undisturbed. It does, however, rely on the consumer to return and

repeat actions several times to build up as detailed a picture as the previous method.

Now, an example of recording consumer brand preference data in the context of a product review site will be described.

The product review example is similar to the above comparison shopping

5 example except that the presentation of information to the consumer has less structure and the sequence of operations will typically take place all in one site. For example, consider a consumer trying to choose a scanner. Once the consumer has indicated an interest in scanners, the product review site may list, on a 2nd screen, the editors choice brands which may include an HP, a Visioneer and an Epson scanner. If the user links

10 to the HP review page we treat this action as an action in favor of HP and the brand preference record may look like:

3, 3, 1, 400.00, 1300.00	(N, n, n2, C, R)
15	HP, 1, 1, 400.00, 400 (b ₁ , Mb ₁ , Nb ₁ , Cb ₁ , Rb ₁)
	Visioneer, 0, 1, 0.0, 200 (b ₂ , Mb ₂ , Nb ₂ , Cb ₂ , Rb ₂) ...
	Epson, 0, 1, 0.0, 700 (b _n , Mb _n , Nb _n , Cb _n , Rb _n))

If the user then links to the Visioneer product review page, the brand preference

20 record may look like:

3, 3, 1, 400.00, 1300.00	(N, n, n2, C, R)
25	HP, 0, 1, 0.0, 400 (b ₁ , Mb ₁ , Nb ₁ , Cb ₁ , Rb ₁)
	Visioneer, 1, 1, 170.0, 200 (b ₂ , Mb ₂ , Nb ₂ , Cb ₂ , Rb ₂) ...
	Epson, 0, 1, 0.0, 700 (b _n , Mb _n , Nb _n , Cb _n , Rb _n))

These two brand preference records, as described above, may be combined to form the following brand preference record:

	3, 3, 2, 570.00, 1300.00	(N, n, n2, C, R)
	HP,1, 1, 400.0, 400	(b ₁ , Mb ₁ , Nb ₁ , Cb ₁ , Rb ₁)
5	Visioneer,1, 1, 170.0, 200	(b ₂ , Mb ₂ , Nb ₂ , Cb ₂ , Rb ₂) ...
	Epson, 0, 1, 0.0, 700	(b _n , Mb _n , Nb _n , Cb _n , Rb _n))

As the consumer explores other product review sites, these brand preference records may be accumulated in order to determine if an incentive should be given to the consumer. The numbers may be altered significantly if the user went to the full product index and started working from there, but the basic concept of recording the 10 brand preferences of the consumer is the same.

Based on the above brand preference records, a numerical representation of consumer preference may be calculated which can be assigned to brands in general or to brands within a product sub-category to determine if an incentive is going to be distributed to a consumer. In the above examples, we have concentrated on collecting 15 information, such as the number of selections made by the consumer and the product price. The invention may be expanded to incorporate other types of consumer behavior information, such as number of clicks on a brand description, text or bitmap items, user entered preference scores (e.g., score this brand out of the ten shown versus the other brands), an amount of time spent at a brand description, text or bitmap, or a size of 20 brand information (text or bitmap). Now, a method in accordance with the invention for requesting an incentive will be described.

Figure 14 is flowchart illustrating an example of a method 200 for requesting an incentive. In order to request an incentive for a consumer, the software application,

which may be embedded within the incentive distribution site, such as a portal, comparison shopping site or Internet Store, must first prepare one or more brand preference records to the electronic incentive system over the Internet. Thus, in step 202, the software application generates an incentive request message which may

5 include one or more brand preference records or may be sent subsequent to one or more messages containing brand preference records. The incentive request message may contain, for example, client identity information, an identification of the particular incentive distribution site, a version and identity of consumer preference detector software application, the type of incentives which can be received by the particular

10 incentive distribution site (e.g., coupons, rebates, banner ads, etc.), a unique to incentive system cookie reference number for consumer reference (this may be obtained from an incentive system reference number server if the consumer does not already have one), a product Category and sub-category identification, a type of brand preference record being sent and one or more brand preference records. Once the

15 incentive system has determined the appropriate incentive, if any, the incentive distribution site, in step 204, receives an incentive response. In step 206, it is determined, based on the received response, whether an incentive is available. If an incentive is available, then in step 208, the incentive distribution site generates an appropriate incentive, such as a banner advertisement with the incentive so that the

20 consumer may choose that incentive. If no incentive is available or if the incentive has already been distributed and displayed, then the method for requesting an incentive is

completed. Now, a method for determining an incentive to deliver to a particular consumer in accordance with the invention will be described.

Figure 15 is flowchart illustrating an example of a method for determining an incentive to deliver to a consumer. The method for determining the incentive may be 5 carried out by a rule-based engine which determines which incentive to offer in response to an incentive request message. Although a very complex rule engine which uses complex rules may be used in accordance with the invention, a simpler rule engine will be described here.

In step 222, the engine may identify, from the product category and sub- 10 category information in the incentive request, which brand (if any) is the owner of that category. Next, in step 224, a number of different probability calculations are performed which estimate the likelihood that the consumer will chose the brand for which an incentive is available. The actual calculations used may depend on the actual 15 incentive policy of the brand manager. A simple form of the probability expression may be of the form:

$$\text{Brand Selection Probability} = \frac{\text{sum of preference measures of brand}}{\text{sum of preference measures of all brands}}$$

such as, for example, $(1/n_2)$ based on brands selected for 2nd round viewing, (Mb/M) based of number of items reaching 2nd round viewing, (Cb/C) based on the value of 20 items reaching 2nd round viewing, (Mb/N) when the consumer keeps going back to stage I list or (Cb/R) .

The collection of all of these probabilities may be referred to as the brand probability vector, and this vector would be updated for each consumer session as new brand preference records arrive. The brand probability vector can be calculated for every brand encountered by the consumer and not just the preferred brand. This allows

- 5 incentive levels to be determined from detailed consumer preferences. For example, a manufacturer of Brand X can offer brand switching incentives to consumers who have a high probability of buying Brand Y, and not offer any incentives to consumers who have a high probability of buying Brand Z. In accordance with the invention, other probabilities may be derived from the data collected in the brand preference records so
- 10 that the brand preference vector may be extended to include these other probabilities.

Once the probability vector has been determined, in step 226, the engine accesses a rule database which will determine the amount and size of the incentive to be offered and selects a rule. An example of a rule might be to identify where the consumer fits into the particular parameters (i.e., probability) and then select an appropriate

- 15 incentive. For example, the rule may be (as shown in pseudocode):

If (Prob > 0.85) deliver an upsell incentive

else if (prob>0.7) return no incentive

if (prob<0.2) deliver a "desperate measures" incentive

if (prob <0.5) offer discount valued at 20% recommended price

5 else offer discount valued at 10% recommended price.

Then, at step 228, the selected incentive, if any, is returned to the incentive distribution site so that it may be displayed to the consumer. In one embodiment, the rules engine may also contain rules which generate randomly generated incentives and other random elements, such as

10 If(Prob > 0.85) deliver an upsell incentive to 50% of the customers randomly selected

Now, several examples of the operation of a WWW-based electronic incentive system in accordance with the invention will be provided.

Figures 16A - 16I are diagrams illustrating web pages displayed on a consumer's browser application as the consumer browses through a comparison shopping site and receives an incentive in accordance with the invention. Thus, each successive web page shows what the consumer sees on his computer display as he navigates through the comparison shopping site. Thus, Figure 16A shows the web page that is displayed to the consumer when he enters the comparison shopping site.

15 From the product areas shown in Figure 16A, the consumer may select, for example, video equipment and the web page shown in Figure 16B is then displayed. This web page permits the consumer to select a product sub-category, such as DVD players, as

20

shown. Once the sub-category is selected, the consumer may view the web page shown in Figure 16C which lists the products in the particular chosen category and sub-category, such as DVD players in this example, which are available for comparison. The web page may also display various information about each product,

5 such as the model number, the manufacturer, the store where it can be purchased and the price. At this web page, the consumer may select one or more particular brands about which the consumer would like more details. For example, as shown in Figure 16D, the consumer may select only a Sony brand DVD player. For this example, assume that the incentive distribution system has the ability to distribute incentives for

10 Sony products, but not for the other brands listed. Since the consumer is only selecting the Sony brand, no incentive will be distributed since the consumer is already showing a preference for Sony and the consumer will see the web page shown in Figure 16E permitting the consumer to buy the Sony product. The consumer may also be able to request more information about the Sony product as shown on the web page in Figure

15 16F.

Returning to Figure 16C, if the consumer selects three different brands of DVD players, as shown in Figure 16G, and the incentive distribution system may distribute incentives for Sony products, then the consumer may receive an incentive to buy the Sony product instead of the other products, as shown in Figure 16H. The incentive

20 may be delivered to the consumer in several different ways. For example, next to the price of the Sony product, there may be a graphic 230 indicating that the consumer will be given a 5% discount if he purchases the Sony product. As another example, a

banner advertisement 232 may be displayed which also indicates that the consumer will receive a 5% discount on any Sony products. These incentives delivered to the consumer directly on the comparison shopping site may convince the consumer to purchase the Sony product instead of the other competing brands. Instead of the single 5 selected Sony product being shown to the consumer, as shown in Figure 16I, the consumer may view all of the various Sony products available including more expensive models. As shown, each Sony model may have the graphic 230 indicating a 5% discount and the page may have the banner advertisement 232. In the web page shown in Figure 16I, the consumer is tempted to upgrade and buy a more expensive 10 Sony model (known as an upsell). Thus, in accordance with the invention, the consumer at the comparison shopping site is pushed towards purchasing the Sony product due to the electronic incentive system which, in the background and invisible to the consumer, is offering the consumer an incentive to buy the Sony products. Now, another example of the electronic incentive system in a product review site will be 15 described.

Figures 17A - 17H are diagrams illustrating examples of web pages displayed on a consumer's browser application as the consumer browses through a product review site and receives an incentive in accordance with the invention. Thus, each successive web page shows what the consumer sees on his computer display as he 20 navigates through the product review site. In this particular example, the consumer is shopping for a scanner and the electronic incentive system may distribute incentives for Visioneer scanners, but not HP or Epson scanners. Figure 17A is an example of a

web page which is displayed when the consumer enters the product review site, such as PC Magazine Online, browsing for a computer scanner. From this page, the consumer may select the editors' choices section by clicking on the hyperlink which takes the consumer to the web page shown in Figure 17B. As shown in Figure 17B, the editors' 5 choices include a HP scanner, a Visioneer scanner and an Epson scanner along with text describing the choices by the editors. If the consumer, for example, clicks on the hyperlink to the HP scanner, the consumer may see the web page shown in Figure 17C which describes the HP scanner in more detail. From the consumer's choice to view the HP scanner page, the electronic incentive system may gather preference 10 information about the consumer that he may prefer an HP product since he went to the HP product review first.

Next, if the consumer returns to the editors' choice site as shown in Figure 17D, he may then decide to look at the Visioneer scanner in more detail by clicking on the appropriate hyperlink. The consumer may then view the web page shown in Figure 15 17E. Since the electronic incentive system may offer incentives for a Visioneer product and the consumer has already looked at the HP scanner, the electronic incentive system may cause a banner advertisement 240 to appear on the web page indicating to the consumer that there is a \$30 mail-in rebate available for a Visioneer scanner. In this example, the incentive may be a mail-in rebate which may be sent to 20 the consumer via e-mail. This incentive, in accordance with the invention, may cause the consumer to select the Visioneer product instead of the HP product. Next, the

consumer may elect to view different vendors who sell the Visioneer products in order to purchase the product and may view the web page shown in Figure 17F.

Instead of purchasing the Visioneer product, assume that the consumer returns to the editors' choice web page as shown in Figure 17G and then selects more information about the HP scanner instead of the Visioneer scanner. The information about the HP scanner is shown in the web page of Figure 17H. In this web page, the electronic incentive system has inserted a banner advertisement 240 into the web page with an incentive to purchase a Visioneer product instead of the HP scanner. Since the consumer is currently viewing the HP scanner information, the incentive offered to the consumer may be larger than it would be if the consumer is looking at the Visioneer product already. Therefore, in this example, the consumer was offered a \$30 mail-in coupon as shown in Figure 17E while viewing the information about the Visioneer scanner, while he may now be offered a \$50 mail-in rebate while viewing the HP scanner information as shown in Figure 17H. Thus, in accordance with the invention, the amount of the incentive changes depending on the actions of the consumer.

In summary, the electronic incentive system permits a manufacturer or vendor to influence a consumer to purchase a particular brand of product by providing an incentive to the consumer. The electronic incentive system is invisible to the consumer (i.e., the consumer does not know information about his/her brand preferences are being gathered and analyzed), but the electronic incentive system may provide the consumer with an incentive to buy a particular brand of product.

While the foregoing has been with reference to a particular embodiment of the invention, it will be appreciated by those skilled in the art that changes in this embodiment may be made without departing from the principles and spirit of the invention, the scope of which is defined by the claims attached hereto.

What is claimed:

1. A method for determining consumer preference in a computer with an attached display connected to a network for receiving and transmitting network information, comprising:
 - receiving data identifying a plurality of products being viewed on a computer display by the consumer;
 - determining the corresponding brands of the products being viewed by the consumer; and
 - 10 generating product interest data, based on the plurality of products being viewed by the consumer, which is used to represent the interest level of the consumer in a particular product.
2. The method of Claim 1, wherein generating the product interest data comprises generating product interest data, based on the plurality of products being viewed by the consumer, which is used to represent the interest level of the consumer in a particular product category.
 - 15 3. The method of Claim 1, wherein receiving the data further comprises counting the number of times a product belongs to a category.
 4. The method of Claim 1, wherein receiving the data further comprises 20 counting the number of times a product belongs to a particular product brand.
 5. The method of Claim 1, wherein receiving the data further comprises estimating preference probabilities based on the ratio of a product category count to the total of all product category counts.

6. The method of Claim 1, wherein receiving the data further comprises estimating preference probabilities based on the ratio of a product brand count to the total of all product brand counts.

7. The method of Claim 1, wherein the receiving further comprises
5 assigning more weight to a count obtained from recently arrived data in the calculations of preference probabilities.

8. The method of Claim 1, wherein the receiving further comprises assigning more weight to a count if it is related to a product which occupies more viewing space on the display.

10 9. The method of Claim 1, wherein the receiving further comprises storing prior brand preference probabilities of a consumer and combining the stored brand preference probability information of the user with newly collected brand preference probability information to determine updated data which is used to represent interest level of the consumer.

15 10. A system for determining consumer preference in a computer with an attached display connected to a network for receiving and transmitting network information, comprising:

means for monitoring the products available for viewing on a computer display by the consumer in order to generate information about which products are actually
20 being viewed;

means for determining the corresponding brands of the products actually being viewed by the consumer; and

means for generating numeric data, based on the plurality of products available for viewing by the consumer and the products actually viewed by the consumer, that is
25 used to represent the interest level of the consumer in a particular product brand.

11. The system of Claim 10, wherein the monitoring means further comprises means for counting the number of times a product belongs to a category.
12. The system of Claim 10, wherein the monitoring means further comprises means for counting the number of times a product belongs to a particular product brand.
13. The system of Claim 10, wherein the monitoring means further comprises means for estimating preference probabilities based on the ratio of a product category count to the total of all product category counts.
14. The system of Claim 10, wherein the monitoring means further comprises means for estimating preference probabilities based on the ratio of a product brand count to the total of all product brand counts.
15. The system of Claim 10, wherein the monitoring means further comprises means for assigning more weight to a count obtained from recently arrived data in the calculations of preference probabilities.
16. The system of Claim 10, wherein the monitoring means further comprises means for assigning more weight to a count if it is related to a product which occupies more viewing space on the display.
17. The system of Claim 10, wherein the monitoring means further comprises means for storing prior brand preference probabilities of a consumer and means for combining the stored brand preference probability information of the user with newly collected brand preference probability information to determine updated data which is used to represent interest level of the consumer.
18. A method for determining consumer preference in a computer with an attached display connected to a network for receiving and transmitting network information, comprising:

receiving one or more unique addresses identifying one or more web pages viewed on a computer display by the consumer;

mapping the one or more unique addresses into one or more pieces of product identification information; and

5 generating product interest data, based on the one or more pieces of product identification information, that is used to represent the interest level of the consumer in a product category.

19. The method of Claim 18, wherein the generating the product interest data further comprises generating product interest data indicating the interest level of 10 the consumer in a particular product brand.

20. The method of Claim 18, wherein generating the product interest data further comprises generating product interest data indicating the interest level of the consumer in a particular merchant brand.

21. The method of Claim 18 further comprising generating an incentive 15 based on the product interest data and communicating the generated incentive to the consumer .

22. The method of Claim 21, wherein the incentive further comprise one or more of an upsell incentive, a cross sell incentive, a brand switch incentive, a fixed value discount, a fixed rebate after purchase and a points-based incentive.

20 23. The method of Claim 21, wherein the incentive generator further comprises storing one or more past product interest data for a consumer so that the historical product interest data is used in combination with the current product interest data to determine the product interest data of the consumer.

24. The method of Claim 18, wherein the mapping further comprises 25 comparing the received unique addresses to a database containing data records that

includes a unique address and a corresponding brand indication, outputting one or more brand indications that match the received unique addresses, and determining the product interest data for the consumer based on the one or more brand indications.

25. The method of Claim 24, wherein determining the product interest data
5 further comprises determining a brand preference probability based on the brand indications derived from the unique addresses, applying one or more incentive rules to each brand preference probability to determine if an incentive is to be provided for the particular consumer.

26. A system for determining consumer preference in a computer with an
10 attached display connected to a network for receiving and transmitting network information, comprising:

means for receiving one or more unique addresses identifying one or more web pages viewed on a computer display by the consumer;

15 means for mapping the one or more unique addresses into one or more pieces of product identification information; and

means for generating product interest data, based on the one or more pieces of product identification information, that is used to represent the interest level of the consumer in a product category.

27. The system of Claim 26, wherein the generating means further
20 comprises means for generating product interest data indicating the interest level of the consumer in a particular product brand.

28. The system of Claim 26, wherein the generating means further comprises means for generating product interest data indicating the interest level of the consumer in a particular merchant brand.

29. The system of Claim 26 further comprising means for generating an incentive based on the product interest data and means for communicating the generated incentive to the consumer to provide the consumer with an incentive.

30. The system of Claim 29, wherein the incentive further comprise one or 5 more of an upsell incentive, a cross sell incentive, a brand switch incentive, a fixed value discount, a fixed rebate after purchase and a points-based incentive.

31. The system of Claim 29, wherein the incentive generator means further comprises means for storing one or more past product interest data for a consumer so that the historical product interest data is used in combination with the current product 10 interest data to determine the product interest data of the consumer.

32. The system of Claim 26, wherein the mapping means further comprises means for comparing the received unique addresses to a database containing data records that includes a unique address and a corresponding brand indication, means for outputting one or more brand indications that match the received unique addresses, and 15 means for determining the product interest data for the consumer based on the one or more brand indications.

33. The system of Claim 32, wherein the determining means further comprises means for determining a brand preference probability based on the brand indications derived from the unique addresses, means for applying one or more 20 incentive rules to each brand preference probability to determine if an incentive is to be provided for the particular consumer.

34. A method for determining consumer preference in a computer with an attached display connected to a network for receiving and transmitting network information, comprising:

25 receiving unique product identifier data for a plurality of products viewed on a computer display by a consumer;

accessing a database which maps unique product identifiers to product category; and

generating product interest data for the consumer that is used to represent the interest level of the consumer in the product categories based on the unique product
5 identifiers.

35. The method of Claim 34, wherein the product interest data further comprises data about the interest of the consumer in a particular product brand.

36. The method of Claim 34, wherein generating the product interest data further comprises generating product interest data indicating the interest level of the
10 consumer in a particular merchant brand.

37. The method of Claim 34 further comprising generating an incentive based on the product interest data and communicating the generated incentive to the consumer to provide the consumer with an incentive.

38. The method of Claim 37, wherein the incentive further comprise one or
15 more of an upsell incentive, a cross sell incentive, a brand switch incentive, a fixed value discount, a fixed rebate after purchase and a points-based incentive.

39. The method of Claim 37, wherein the incentive generator further comprises storing one or more past product interest data for a consumer so that the historical product interest data is used in combination with the current product interest
20 data to determine the product interest data of the consumer.

40. The method of Claim 34, wherein the mapping further comprises comparing the received unique addresses to a database containing data records that includes a unique address and a corresponding brand indication, outputting one or more brand indications that match the received unique addresses, and determining the product interest data for the consumer based on the one or more brand indications.
25

41. The method of Claim 40, wherein determining the product interest data further comprises determining a brand preference probability based on the brand indications derived from the unique addresses, applying one or more incentive rules to each brand preference probability to determine if an incentive is to be provided for the 5 particular consumer.

42. The method of Claim 34, wherein the unique product identifier data comprises a uniform product code (UPC).

43. The method of Claim 34, wherein the unique product identifier data comprises a stock keeping unit (SKU) code.

10 44. A system for determining consumer preference in a computer with an attached display connected to a network for receiving and transmitting network information, comprising:

means for receiving unique product identifier data for a plurality of products viewed on a computer display by a consumer;

15 means for accessing a database which maps unique product identifiers to product category; and

means for generating product interest data for the consumer that is used to represent the interest level of the consumer in the product categories based on the unique product identifiers.

20 45. The system of Claim 44, wherein the generating means further comprises means for generating product interest data indicating the interest level of the consumer in a particular product brand.

25 46. The system of Claim 44, wherein the generating means further comprises means for generating product interest data indicating the interest level of the consumer in a particular merchant brand.

47. The system of Claim 44 further comprising means for generating an incentive based on the product interest data and means for communicating the generated incentive to the consumer to provide the consumer with an incentive.

48. The system of Claim 47, wherein the incentive further comprise one or 5 more of an upsell incentive, a cross sell incentive, a brand switch incentive, a fixed value discount, a fixed rebate after purchase and a points-based incentive.

49. The system of Claim 47, wherein the incentive generator means further comprises means for storing one or more past product interest data for a consumer so that the historical product interest data is used in combination with the current product 10 interest data to determine the product interest data of the consumer.

50. The system of Claim 47, wherein the mapping means further comprises means for comparing the received unique addresses to a database containing data records that includes a unique address and a corresponding brand indication, means for outputting one or more brand indications that match the received unique addresses, and 15 means for determining the product interest data for the consumer based on the one or more brand indications.

51. The system of Claim 50, wherein the determining means further comprises means for determining a brand preference probability based on the brand indications derived from the unique addresses, means for applying one or more 20 incentive rules to each brand preference probability to determine if an incentive is to be provided for the particular consumer.

52. The system of Claim 44, wherein the unique product identifier data comprises a uniform product code (UPC).

53. The system of Claim 44, wherein the unique product identifier data 25 comprises a stock keeping unit (SKU) code.

54. A system for determining a consumer's brand preferences and providing the consumer with an incentive based on that brand preference, the system comprising:

a brand preference detector that analyzes the consumer actions and generates a brand preference record indicating the brand preference of the consumer;

5 a record generator that receives the brand preference record of the consumer and generates a brand selection probability;

an incentive engine that determines, based on the brand selection probability, if and the amount of an incentive that is being provided to the consumer; and

10 a display that displays any incentive provided to the consumer based on the determination of the incentive engine.

55. The system of Claim 54, wherein the brand further comprises a product brand.

56. The system of Claim 54, wherein the brand further comprises a merchant brand.

15 57. The system of Claim 54 further comprising a catalog of products stored on a portable medium, the portable medium also storing one or more software applications that are executed to implement the brand preference detector, the record generator, and the incentive engine so that the preference determination and incentive distribution system is contained on the portable medium.

20 58. The system of Claim 57, wherein the portable medium comprises a compact disk.

59. The system of Claim 54 further comprising a client computer connected by a communications network to a server computer, the client computer further

comprising the brand preference detector and the display and the server further comprising the record generator and the incentive engine.

60. The system of Claim 54 further comprising a personal computer having a persistent storage system, the persistent storage system storing one or more software applications, the one or more software applications comprising the brand preference detector, the record generator and the incentive engine.

5 61. The system of Claim 54, wherein the incentive further comprise one or more of an upsell incentive, a cross sell incentive, a brand switch incentive, a fixed value discount, a fixed rebate after purchase and a points-based incentive.

10 62. The system of Claim 54, wherein the brand preference detector further comprises a software application being executed by a central processing unit of a personal computer.

15 63. The system of Claim 62, wherein the brand preference detector further comprises means for transmitting the brand preference record over a communications link to a server computer.

64. The system of Claim 54, wherein the brand preference detector is located on a server computer, the brand preference detector receiving an event descriptor from a client computer and generating a brand preference record based on the received event descriptor.

20 65. The system of Claim 54, wherein the brand preference detector is located in a personal digital assistant.

66. The system of Claim 54, wherein the consumer actions comprises one or more of a search request, a set of search results, a visit to a web site, a number and type of brands chosen, a number of clicks on a particular brand description, a

preference score, an amount of time spent by the consumer of a particular product description and a size of the brand description selected by the user.

67. The system of Claim 66, wherein the brand preference detector further comprises a brand preference database for storing one or more brand preference 5 records for a consumer so that the historical brand preference record is determined for the consumer.

68. The system of Claim 54, wherein the record generator comprises means for matching a brand preference record to an incentive offering in a database and means for communicating the incentive offering to the display means so that the 10 incentive is displayed to the user while the user is viewing the particular product.

69. The system of Claim 68, wherein the record generator further comprises an event preprocessor that generates information about a user actions and communicates that information to a remote event to brand database, the event to brand database comprising means for converting the information about the user actions into 15 brand preference records that are communicated to the record generator so that the location of the event preprocessor gathers but does not process the brand preference data.

70. The system of Claim 69, wherein the event preprocessor is located at a merchant web site and the event to brand database is located at a separate server so that 20 the processing load on the merchant web site is not unduly increased due to the incentive generation.

71. The system of Claim 54, wherein the incentive engine further comprises means for receiving the brand preference probability, means for applying one or more incentive rules to each brand preference probability to determine if an incentive is 25 being provided for the particular user and a rules database for storing the one or more incentive rules.

72. The system of Claim 71, wherein the incentive rules comprise means for changing the probability of providing an incentive to the user based on the user actions reflected in the brand preference probability.

73. The system of Claim 72, wherein the rules further comprises means for 5 randomly providing an incentive to a user based on the brand preference probabilities.

74. The system of Claim 54, wherein the consumer actions comprises moving between one or more web sites using one or more URLs, and wherein the record generator comprises means for generating the brand preference probability based on URLs visited by the consumer.

10 75. The system of Claim 54, wherein the consumer actions comprise scanning a UPC code to generate information about the products being viewed by the consumer and wherein the record generator comprises means for generating a brand preference probability based on the UPC codes.

15 76. The system of Claim 54 further comprising means for processing the brand preference records to generate one or more reports based on the brand preference records, the reports providing product preference information to third parties.

77. The system of Claim 54 further comprising means for redeeming the incentive provided to a consumer.

20 78. The system of Claim 77, wherein the redemption means comprises means for electronically sending a rebate coupon to the consumer so that the consumer prints out the rebate coupon, signs it and sends it to the appropriate address.

79. The system of Claim 77, wherein the redemption means further comprises means for providing the incentive to the merchant site during the checkout of the consumer so that the incentive is applied when the consumer buys the product.

80. A system for determining a consumer's preferences and providing the consumer with an incentive based on that preference, the system comprising:

means for analyzing the consumer actions and generating a brand preference record indicating the brand preference of the consumer;

5 means for generating a brand selection probability based on the received brand preference record of the consumer;

means for determining, based on the brand selection probability, if and the amount of an incentive that is being provided to the consumer; and

10 means for displaying any incentive provided to the consumer based on the determination of the incentive engine.

81. A method for determining a consumer's preferences and providing the consumer with an incentive based on that preference, the method comprising:

analyzing one or more consumer actions;

15 generating a brand preference record using a brand preference detector, the brand preference record indicating the brand preference of the consumer based on the consumer actions;

generating a brand selection probability based on the received brand preference record of the consumer;

20 determining using a record generator having an incentive engine, based on the brand selection probability, if and the amount of an incentive that is being provided to the consumer; and

displaying any incentive provided to the consumer based on the determination of the incentive engine.

82. The method of Claim 81, wherein the brand further comprises a product brand.

83. The method of Claim 81, wherein the brand further comprises a merchant brand.

5 84. The method of Claim 81 further comprising storing a catalog of products on a portable medium, the portable medium also storing one or more software applications that are executed to implement the brand preference detector, the record generator, and the incentive engine so that the preference determination and incentive distribution method is contained on the portable medium.

10 85. The method of Claim 84, wherein the portable medium comprises a compact disk.

15 86. The method of Claim 81 further comprising connecting a client computer by a communications network to a server computer, the client computer further comprising the brand preference detector and the display and the server further comprising the record generator and the incentive engine.

87. The method of Claim 81 further comprising using a personal computer having a persistent storage method, the persistent storage method storing one or more software applications, the one or more software applications comprising the brand preference detector, the record generator and the incentive engine.

20 88. The method of Claim 81, wherein the incentive further comprise one or more of an upsell incentive, a cross sell incentive, a brand switch incentive, a fixed value discount, a fixed rebate after purchase and a points-based incentive.

25 89. The method of Claim 81, wherein the brand preference determination further comprises executing a software application by a central processing unit of a personal computer.

90. The method of Claim 89, wherein the brand preference determination further comprises transmitting the brand preference record over a communications link to a server computer.

91. The method of Claim 81, wherein the brand preference determining 5 occurs on a server computer, the brand preference detection further comprising receiving an event descriptor from a client computer and generating a brand preference record based on the received event descriptor.

92. The method of Claim 81, wherein the brand preference determining is located in a personal digital assistant.

10 93. The method of Claim 81, wherein the consumer actions comprises one or more of a search request, a set of search results, a visit to a web site, a number and type of brands chosen, a number of clicks on a particular brand description, a preference score, an amount of time spent by the consumer of a particular product description and a size of the brand description selected by the user.

15 94. The method of Claim 93, wherein the brand preference detection further comprises storing one or more brand preference records for a consumer in a brand preference record database so that the historical brand preference record is determined for the consumer.

95. The method of Claim 81, wherein the incentive generation comprises 20 matching a brand preference record to an incentive offering in a database and communicating the incentive offering to the display means so that the incentive is displayed to the user while the user is viewing the particular product.

96. The method of Claim 95, wherein the incentive generation further comprises using an event preprocessor that generates information about a user actions 25 and that communicates that information to a remote event to brand database, the event to brand database comprising converting the information about the user actions into

brand preference records that are communicated to the record generator so that the location of the event preprocessor gathers but does not process the brand preference data.

97. The method of Claim 96, wherein the event preprocessor is located at a merchant web site and the event to brand database is located at a separate server so that the processing load on the merchant web site is not unduly increased due to the incentive generation.

98. The method of Claim 81, wherein the incentive engine further comprises receiving the brand preference probability, applying one or more incentive rules to each brand preference probability to determine if an incentive is being provided for the particular user and a rules database for storing the one or more incentive rules.

99. The method of Claim 98, wherein the incentive rules comprise changing the probability of providing an incentive to the user based on the user actions reflected in the brand preference probability.

100. The method of Claim 99, wherein the rules further comprises randomly providing an incentive to a user based on the brand preference probabilities.

101. The method of Claim 81, wherein the consumer actions comprises moving between one or more web sites using one or more URLs, and wherein the record generator comprises means for generating the brand preference probability based on URLs visited by the consumer.

102. The method of Claim 81, wherein the consumer actions comprise scanning a UPC code to generate information about the products being viewed by the consumer and wherein the record generator comprises generating a brand preference probability based on the UPC codes.

103. The method of Claim 81 further comprising processing the brand preference records to generate one or more reports based on the brand preference records, the reports providing product preference information to third parties.

104. The method of Claim 81 further comprising redeeming the incentive 5 provided to a consumer.

105. The method of Claim 104, wherein the redemption comprises electronically sending a rebate coupon to the consumer so that the consumer prints out the rebate coupon, signs it and sends it to the appropriate address.

106. The method of Claim 104, wherein the redemption further comprises 10 providing the incentive to the merchant site during the checkout of the consumer so that the incentive is applied when the consumer buys the product.

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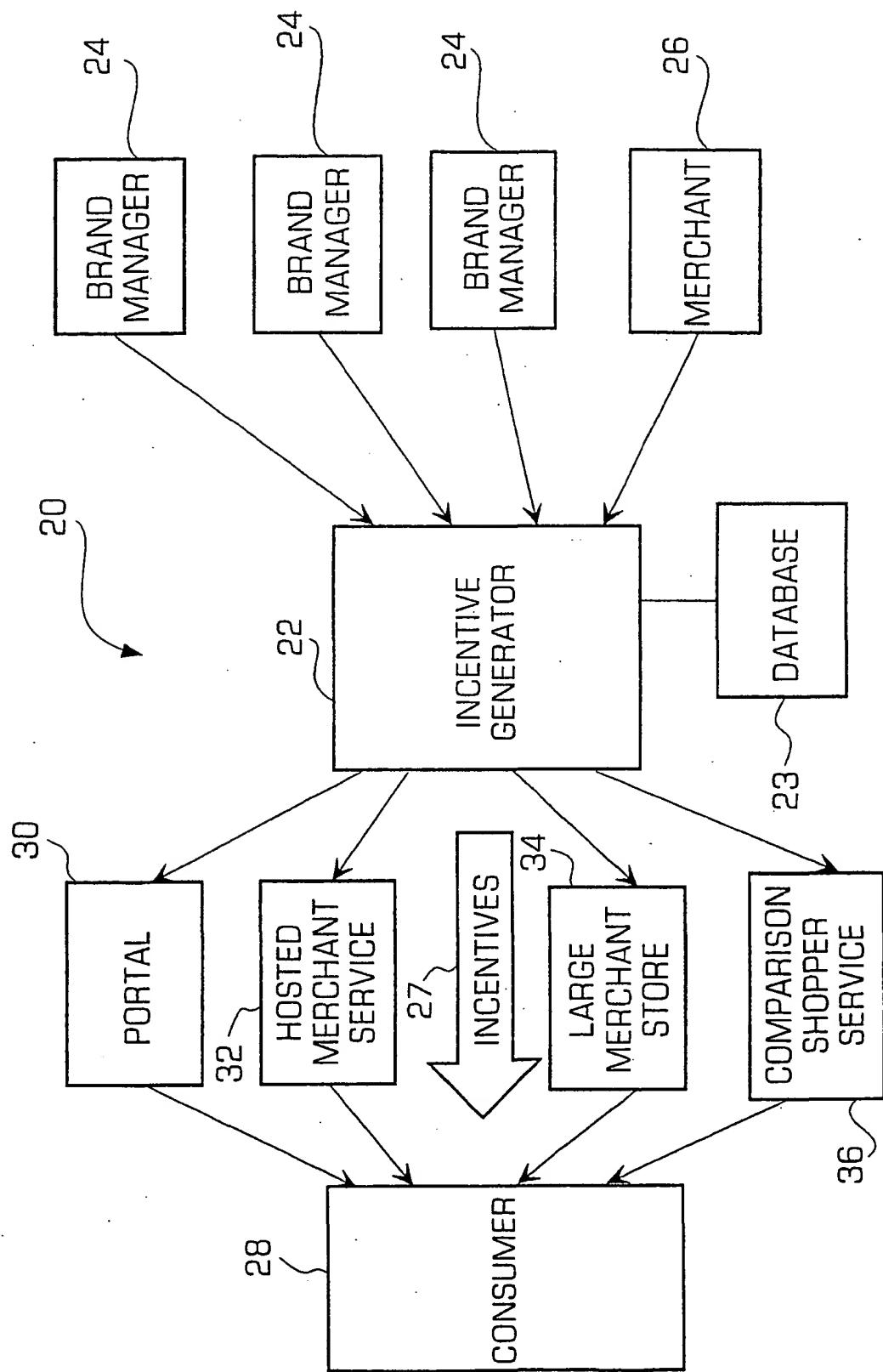


FIGURE 1

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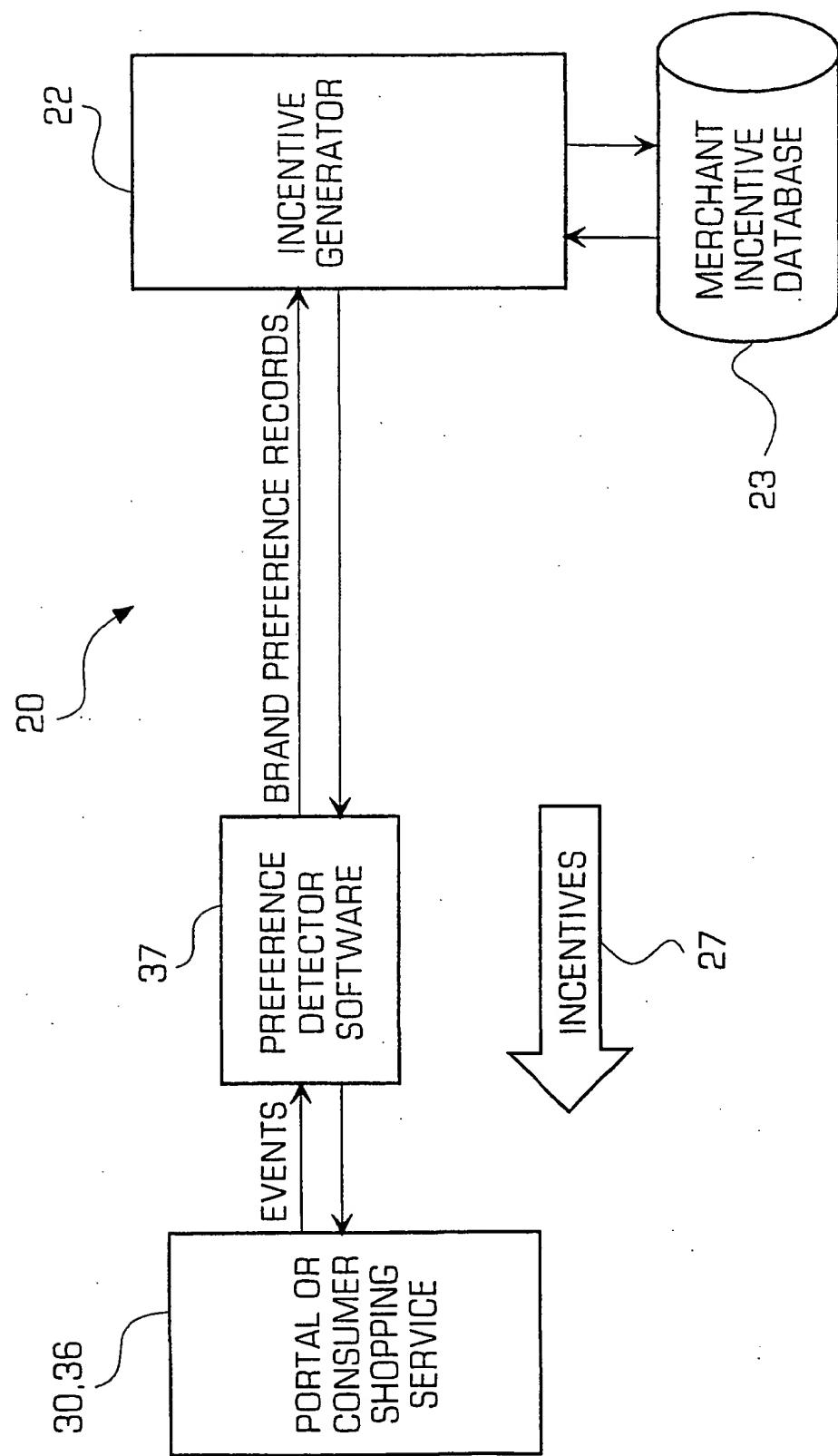


FIGURE 2

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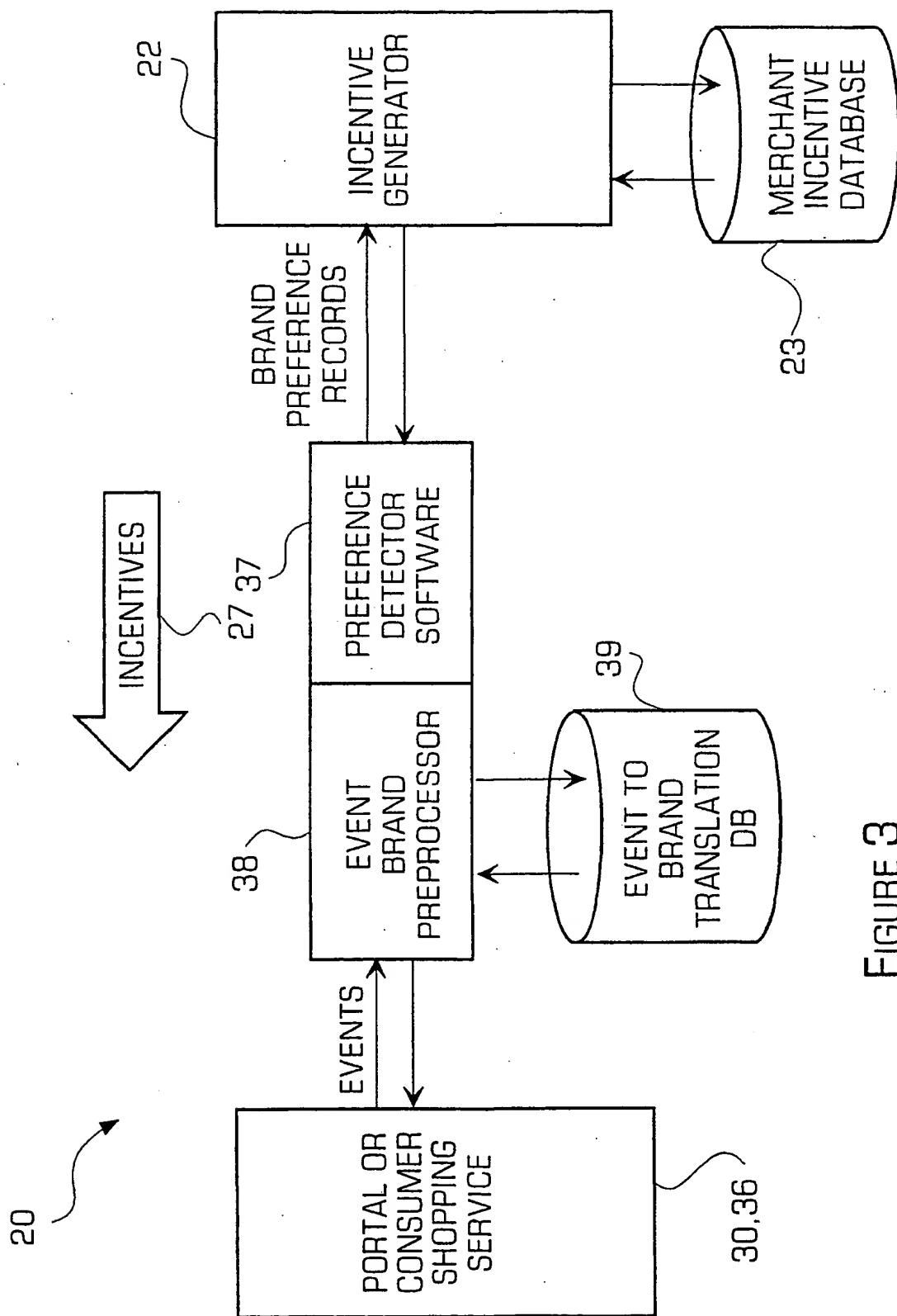


FIGURE 3

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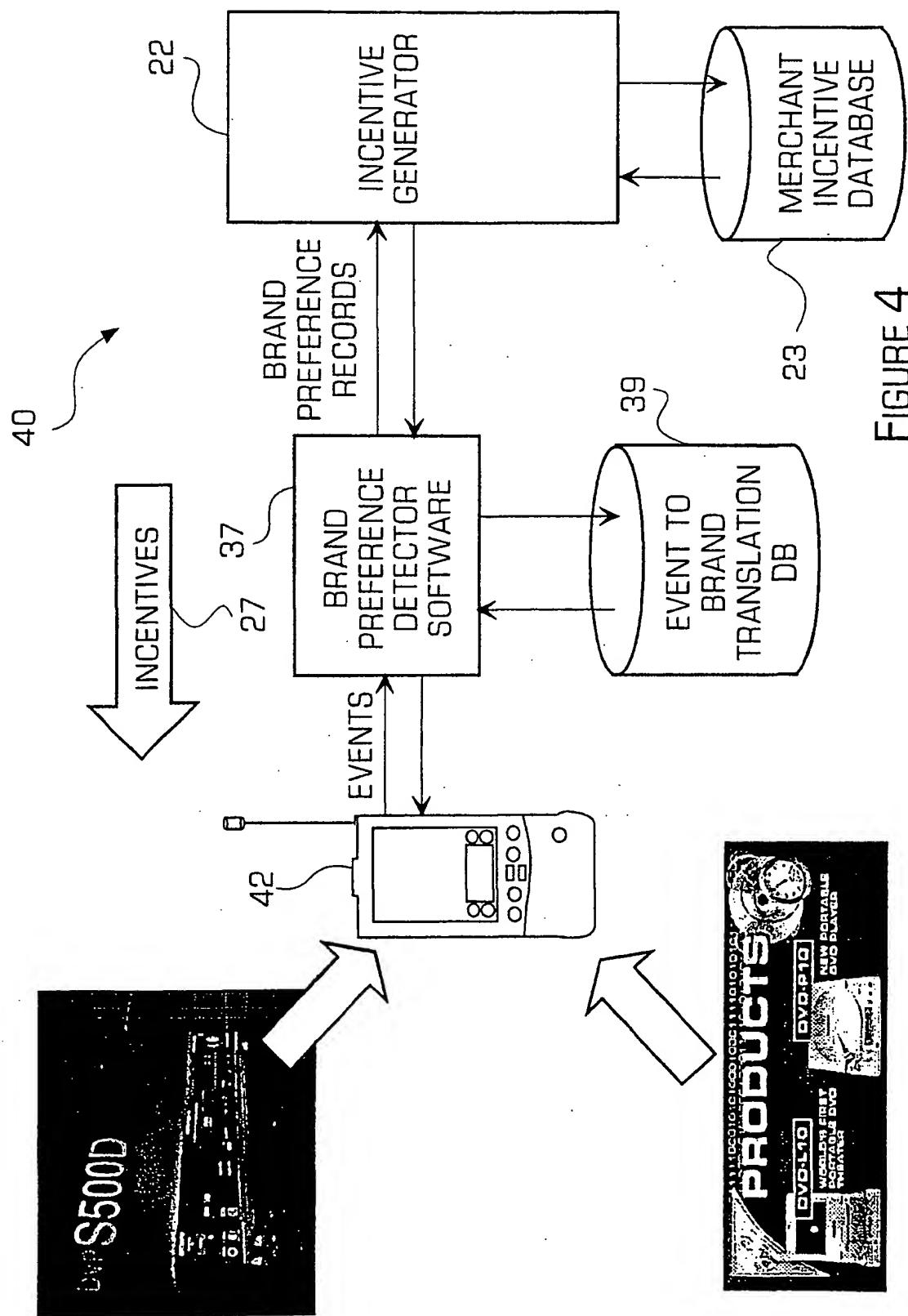


FIGURE 4

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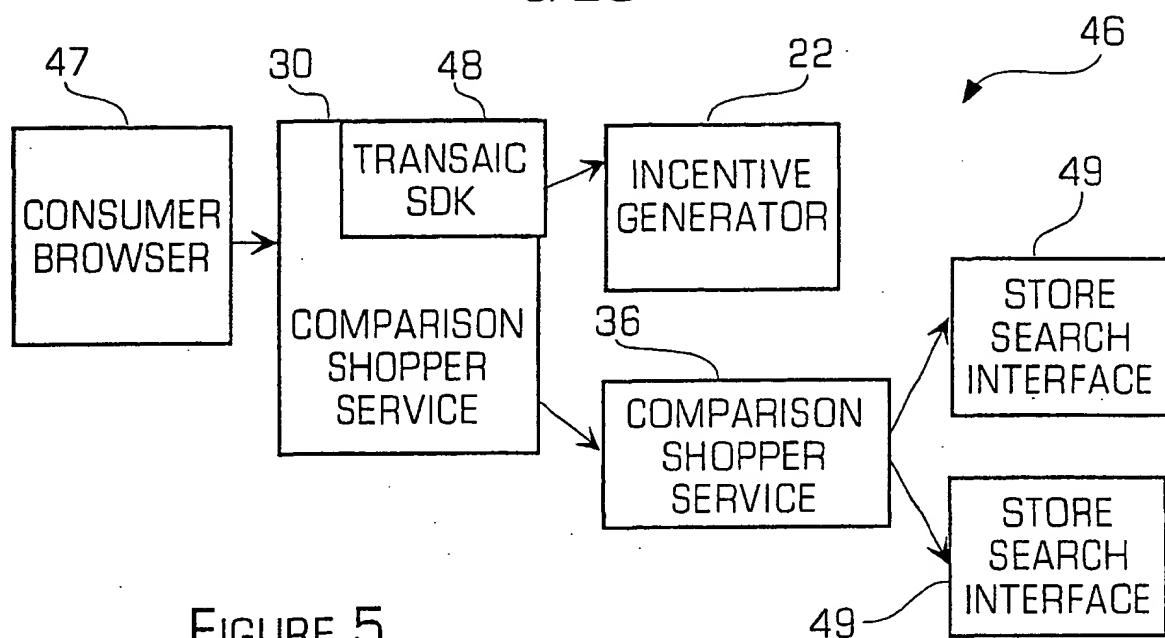


FIGURE 5

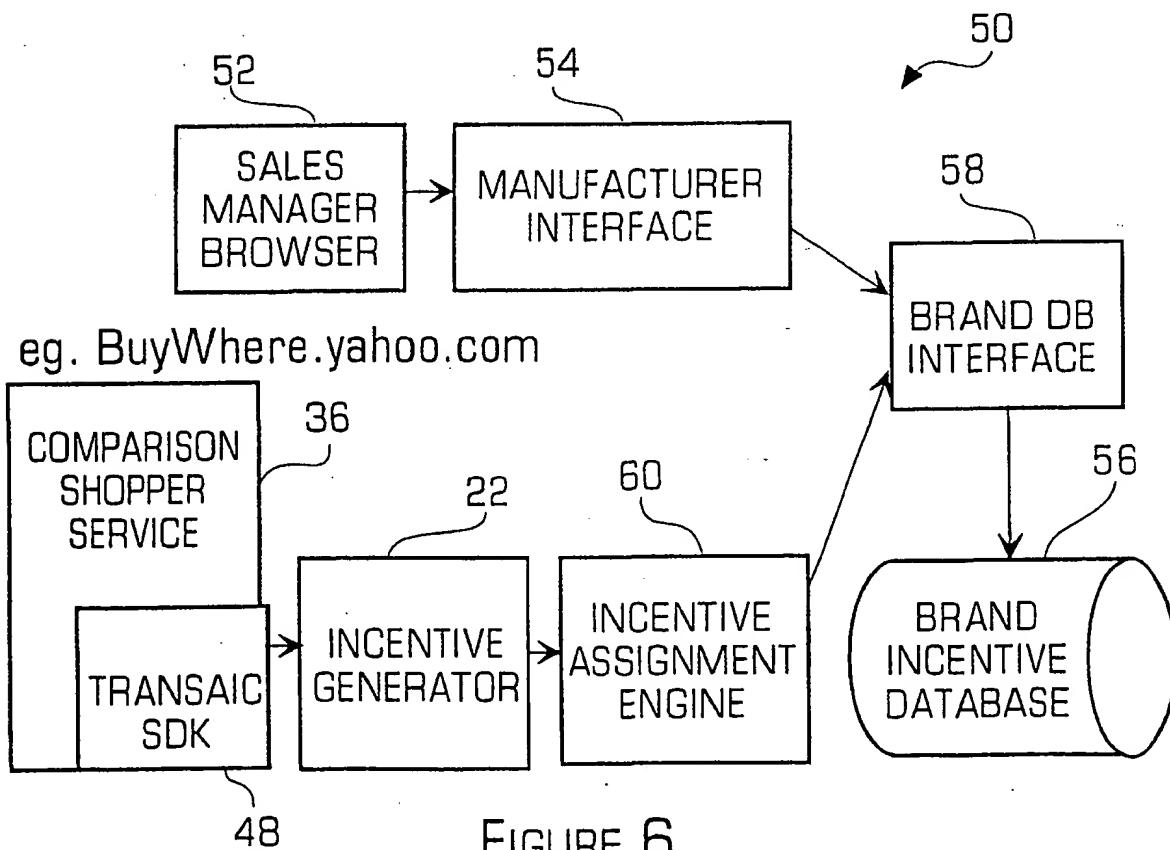
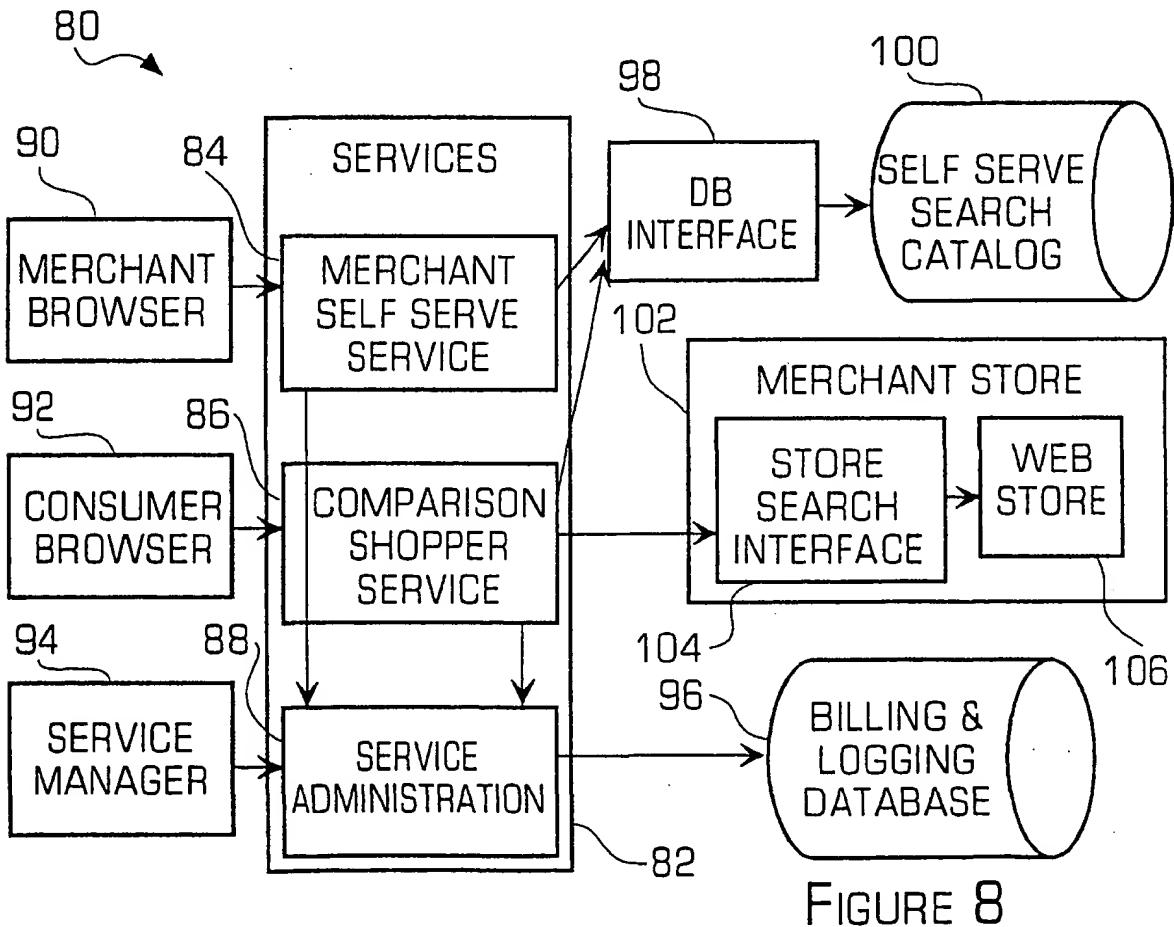
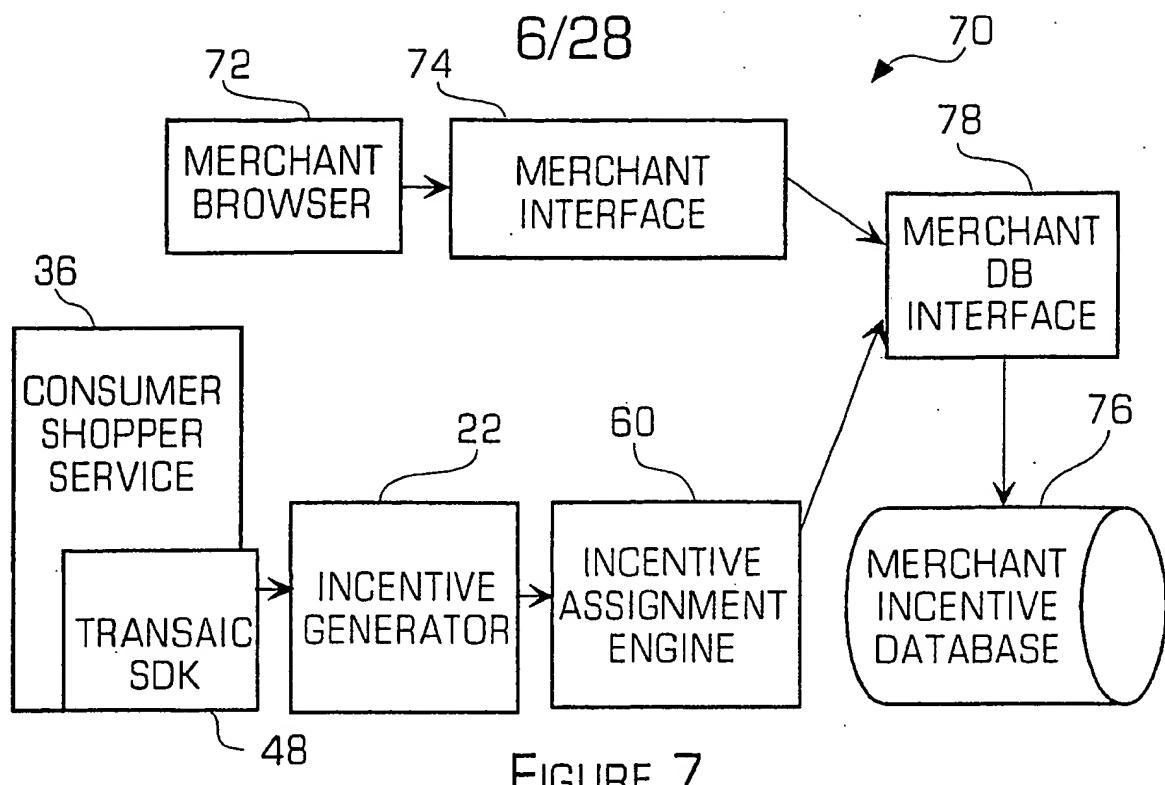


FIGURE 6



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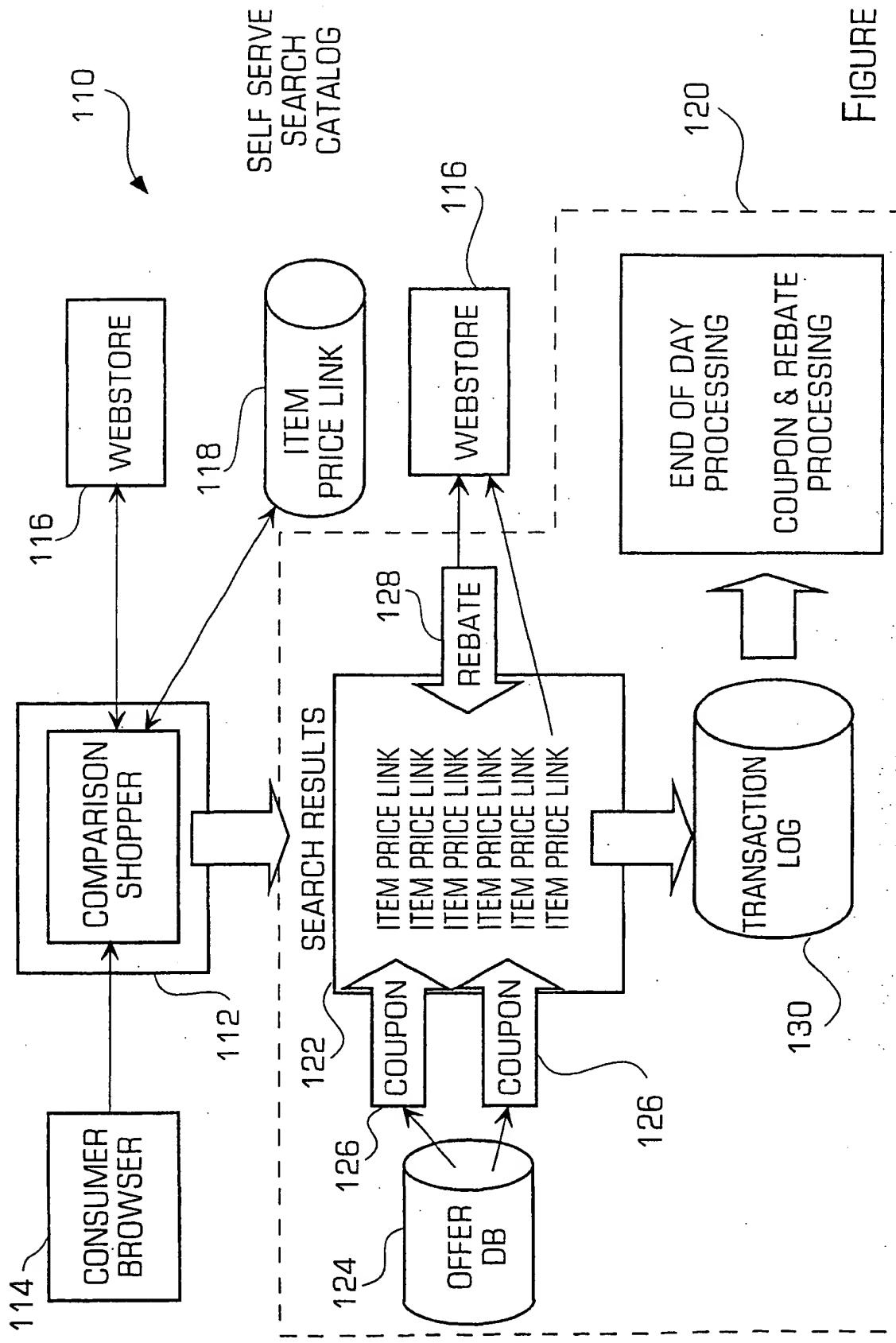


FIGURE 9

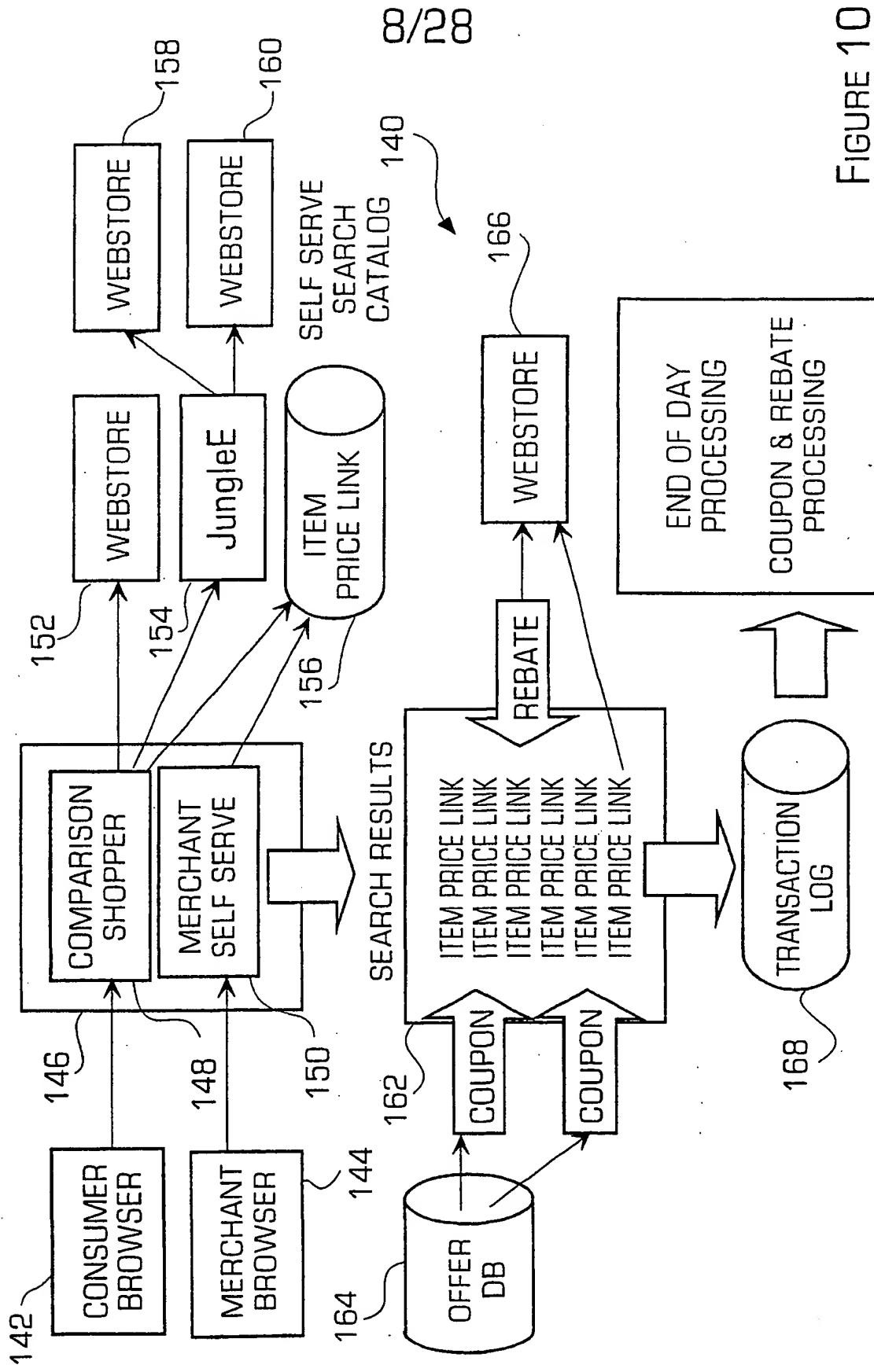


FIGURE 10

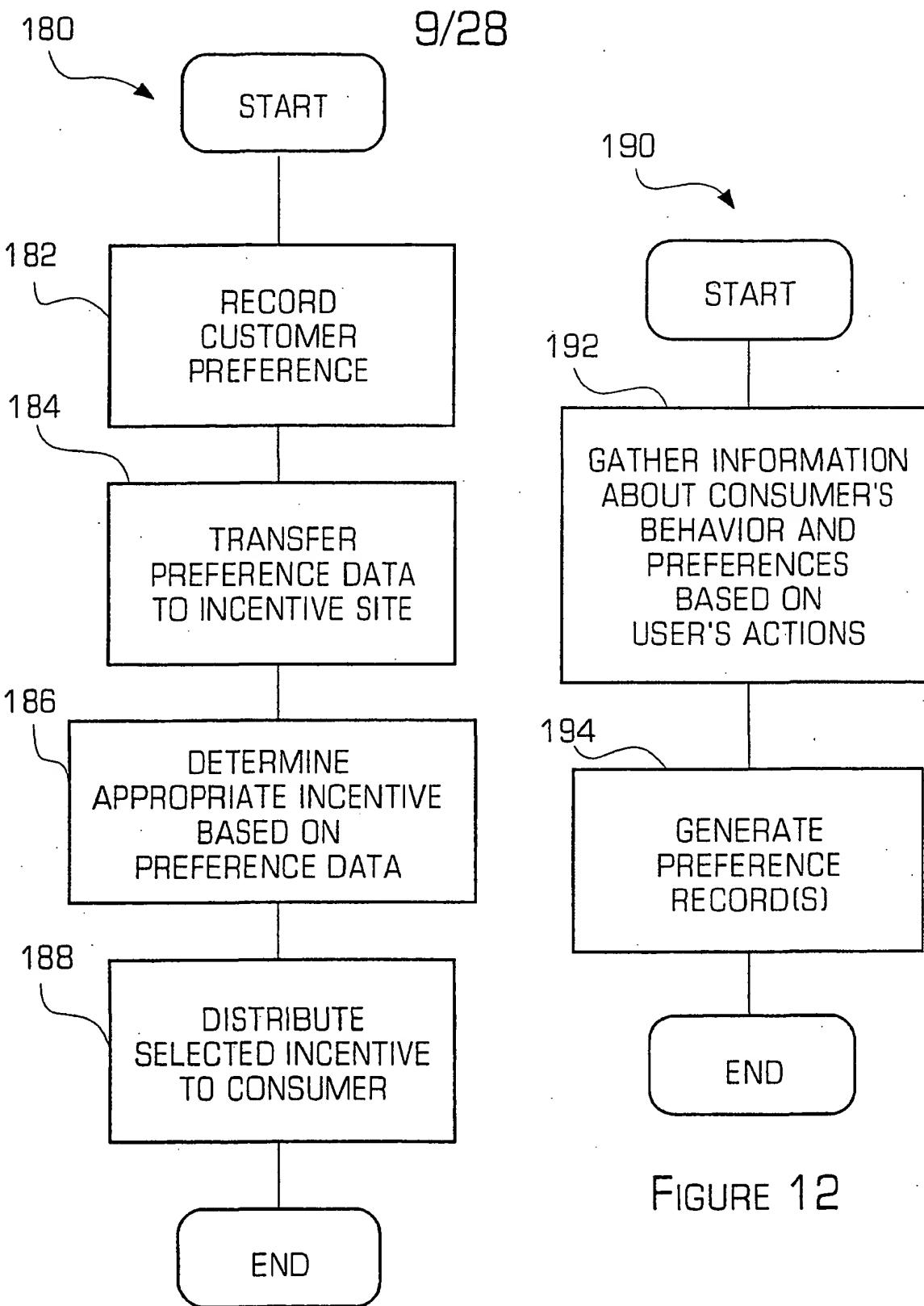


FIGURE 11

FIGURE 12

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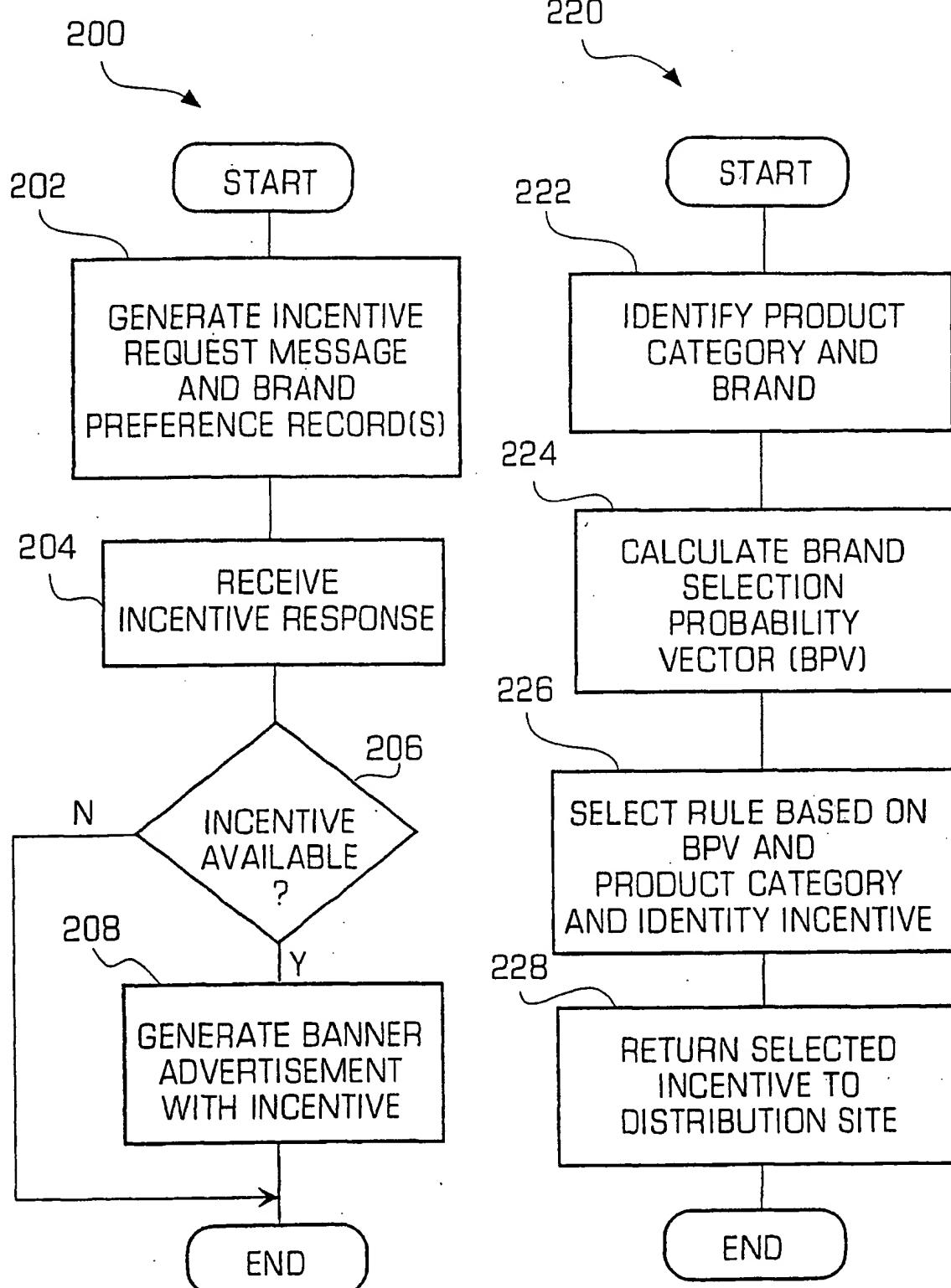
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<u>Manufacturer</u>	<u>Model/Features</u>	<u>Store</u>	<u>Price</u>
TOSHIBA	SD2107 DVD Digital Video Disc Player	Consumer Direct Warehouse	\$359.95 <input type="checkbox"/>
PANASONIC	DVD-A310	Tek Discount Warehouse	\$519.95 <input type="checkbox"/>
SONY	DVP-S3000	Tek Discount Warehouse	\$449.95 <input type="checkbox"/>
TOSHIBA	SD3107	Tek Discount Warehouse	\$529.95 <input type="checkbox"/>
TOSHIBA	SD2107 DVD Player	TweakoPhile	\$489.95 <input type="checkbox"/>
PANASONIC	DVD-A110: DVD, Hi-Bit, Time Base Correction	Video Discount Warehouse	\$365.00 <input type="checkbox"/>
PANASONIC	DVD-A310: DVD, Hi Bit, Dolby, Dual Pickup, Karaoke	Video Discount Warehouse	\$475.00 <input type="checkbox"/>

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FIGURE 13

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FIGURE 16A

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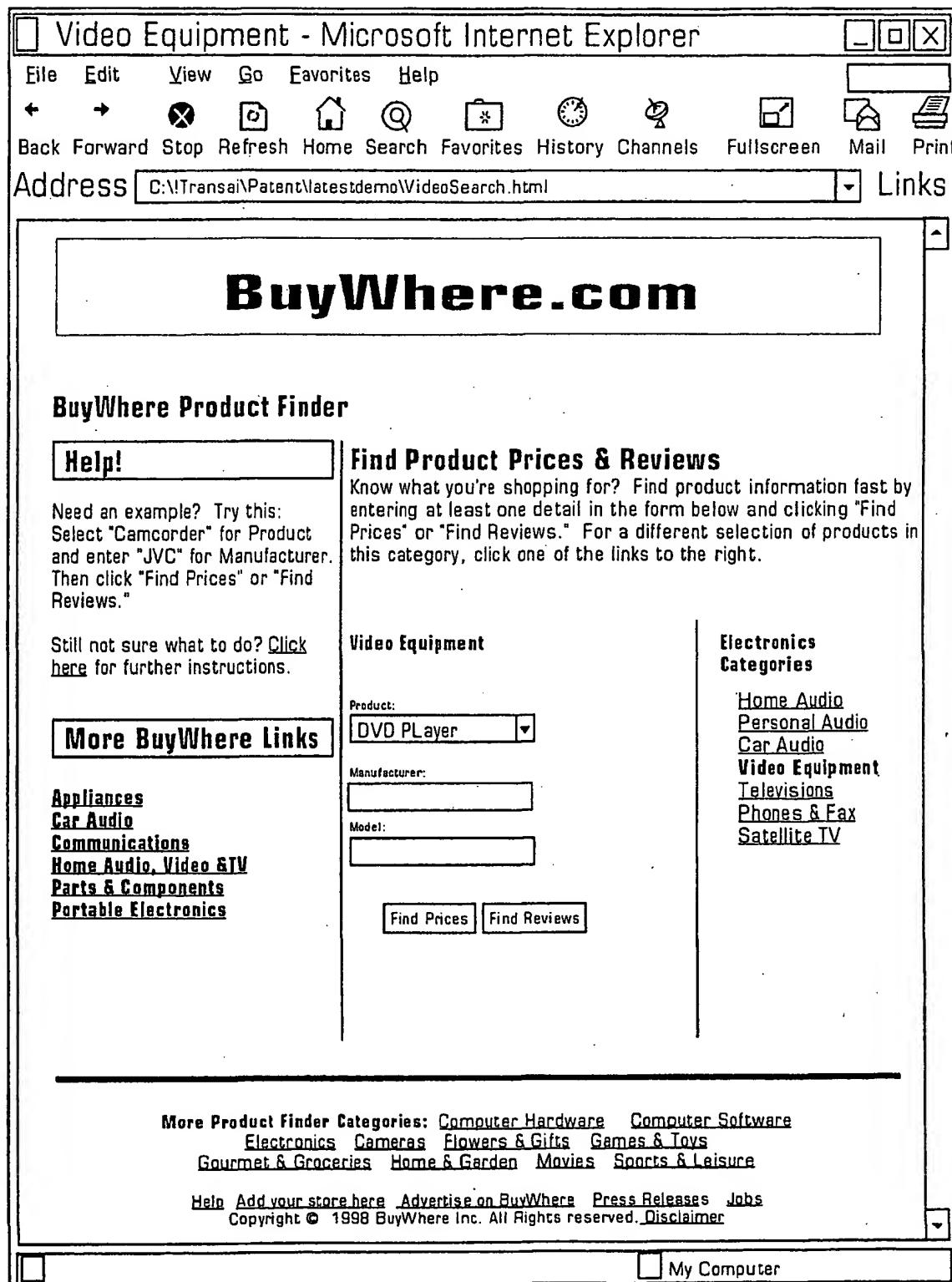


FIGURE 16B

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PANASONIC	DVD-A310	Tek Discount Warehouse	\$519.95 <input type="checkbox"/>
SONY	DVP-S3000	Tek Discount Warehouse	\$449.95 <input type="checkbox"/>
TOSHIBA	SD3107	Tek Discount Warehouse	\$529.95 <input type="checkbox"/>
TOSHIBA	SD2107 DVD Player	TweakoPhile	\$489.95 <input type="checkbox"/>
PANASONIC	DVD-A110: DVD, Hi-Bit, Time Base Correction	Video Discount Warehouse	\$365.00 <input type="checkbox"/>
PANASONIC	DVD-A310: DVD, Hi-Bit, Dolby, Dual Pickup, Karaoke	Video Discount Warehouse	\$475.00 <input type="checkbox"/>

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FIGURE 16C

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PANASONIC	DVD-A310	Tek Discount Warehouse	\$519.95 <input type="checkbox"/>
SONY	DVP-S3000	Tek Discount Warehouse	\$449.95 <input checked="" type="checkbox"/>
TOSHIBA	SD3107	Tek Discount Warehouse	\$529.95 <input type="checkbox"/>
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PANASONIC	DVD-A110: DVD, Hi-Bit, Time Base Correction	Video Discount Warehouse	\$365.00 <input type="checkbox"/>
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FIGURE 16D

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FIGURE 16E

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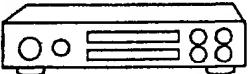
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FIGURE 16F

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PANASONIC	DVD-A310	Tek Discount Warehouse	\$519.95 <input checked="" type="checkbox"/>
SONY	DVP-S3000	Tek Discount Warehouse	\$449.95 <input checked="" type="checkbox"/>
TOSHIBA	SD3107	Tek Discount Warehouse	\$529.95 <input type="checkbox"/>
TOSHIBA	SD2107 DVD Player	TweakoPhile	\$489.95 <input type="checkbox"/>
PANASONIC	DVD-A110: DVD, Hi-Bit, Time Base Correction	Video Discount Warehouse	\$365.00 <input type="checkbox"/>
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FIGURE 16G

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TOSHIBA	SD2107 DVD Digital Video Disc Player	Consumer Direct Warehouse	\$359.95 Buy!
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FIGURE 16H

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Instructions: Click a column title to sort results by the information in that column. To get more details on a particular video item, click on a link in the Model/Features column.

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Manufacturer	Model/Features	Store	Price
SONY	DVP-S3000	Tek Discount Warehouse	5% OFF \$449.95
SONY	DVP-S3000: DVD, Hi Bit, Time Base Correction	Video Discount Warehouse	5% OFF 495.00
SONY	DVP-S7000: Reference DVD Player w/ Correction SPECIAL!	Video Discount Warehouse	5% OFF \$785.00
SONY	DVP-S7000: Home DVD/CD PLAYER w/ Wireless Remote Control	WholeSale Connection	5% OFF \$849.00
SONY	DVP-S3000: DVD, Hi Bit, Time Base Universal Remote Control	WholeSale Connection	5% OFF \$499.00

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FIGURE 16I

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Screen 1.1. PC Magazine April 98 review of scanners.

PC Magazine: Desktop Scanners -- Netscape

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Scanner prices have been in free fall. Five of the models tested for this evaluation are under \$100. Meanwhile, scanning technology continues to improve, giving you plenty of new options from which to choose

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From the October 20, 1998 issue of PC Magazine

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- [ZDNet Products Channel: Scanners](#)
- [computershopper.com: The Place to Select and Buy Scanners](#)

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FIGURE 17A

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Screen 1.2. Read editors' choices

PC Magazine: Desktop Scanners -- Netscape

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Editors' Choice

- **Business: HP ScanJet 6200C**
- **Home/home-office: Visioneer PaperPort OneTouch**
- **Graphics professional: Epson Expression 636 Artist 2**

Users looking for a sturdy, easy-to-use scanner for day-to-day use need look no further than the HP ScanJet 6200C (\$400 street), our Editors' Choice for business. The intelligently designed unit offers both SCSI and USB connectivity, and its software driver combines the best of both worlds: Casual users get one button scans with no intervention needed, while more sophisticated users will find advanced image controls just a mouse click or two away. Out put was among the best in the roundup.

For lighter-duty home and home-office buyers, our Editors' Choice is the Visioneer PaperPort OneTouch (\$200 street, or \$170 after rebate). This was the best document scanner we tested: Visioneer's OCR engine performed the best on our test. The OneTouch is also a commendable image scanner, showing sharp images with respectable retention of detail. For no fuss, text-intensive scanning, the OneTouch can't be beat. Honorable mentions in this class go to the MAG innoscan DTS-3060 (\$150), which delivers good image quality and a family-friendly software bundle; and the Artec ViewStation AM12E (\$85), an ultra-affordable unit whose image quality compared favorably with that of much more expensive units.

Graphics professionals who need uncompromising image quality and complete image control should look at our third Editors' Choice, the Epson Expression 636 Artist 2 (\$700). You can choose to use either the simple point-and-scan driver interface or the more robust SilverFast driver, a powerful, precise tool for fine-tuning all aspects of the scanned image. On our tests, photos were razor-sharp, colors were accurate and vibrant, and the scanner accurately captured faint skin blemishes on our test photo that other scanners missed. A

PC MAGAZINE EDITORS' CHOICE

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FIGURE 17B

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Screen 1.3. Read detail on HP scanners

PC Magazine: Desktop Scanners - HP ScanJet 4100C, 6200C -- Netscape

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Bookmarks Netsite: <http://www.zdnet.com/pcmag/features/scanners98/rev7.html>

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Desktop Scanners

HP ScanJet 4100C, 6200C

M. David Stone

The HP ScanJet 4100C and 6200C generate quality scans with minimal work. The 4100C is optimized for the home or small office, while the 6200C is built for more heavy-duty business needs. The 6200C is aimed, in particular, at business users who regularly scan documents and need high resolutions and a high degree of control over the image. Its combination of ease of use, power and superior scan quality at an affordable price make it our Editors' Choice for business users.

During testing, we found dust under the platens of the 4100C and 6200C. We asked HP about this and were told that the production process for both units includes a test for dust. It's most likely that the dust crept in late in the game, when the early units that we tested were taken apart to upgrade the firmware--a procedure that normal units wouldn't have to undergo. Despite this dust anomaly (which contributed to poor scores on our Black Noise and Ghost tests), the 6200C delivered excellent

Fact File

HP ScanJet 4100C
Letter-size; 300 x 600; 36-bit;
USB; \$200 street

HP ScanJet 6200C
Letter-size; 600 x 1200; 36-bit;
USB and SCSI; \$400

Scanner Output Sample



Download the original scanner output file (~3MB)
[HP ScanJet 4100C](#)
[HP ScanJet 6200C](#)

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FIGURE 17C

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Screen 1.4. Go back to editors' choice again

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FIGURE 17D

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Screen 1.5. Read review of Visioneer product

PC Magazine: Desktop Scanners - - Visioneer PaperPort OneTouch - Netscap

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Visioneer PaperPort One Touch

Denis Tom

For quick, customizable, effortless scanning, you can't beat the Visioneer PaperPort OneTouch, our Editors' Choice for home and home office users. It's an excellent document scanner and very good at scanning images.

Visioneer packs a number of thoughtful, convenient features into the OneTouch and we needed only a few minutes to set it up. The driver interface let us customize the buttons on the front of the scanner for instantaneous scanning, copying, and faxing with our desired image settings--eliminating the need to click through a maze of software menus and controls. The unit's adjustable lid enables you to scan books, magazines, and small objects.

The trade-off for this simplicity, however, is that the image-tweaking options are limited. There are only a few simple prescan tonal controls that let you adjust under- or over-exposed originals. The driver software also lacks a zoom feature, making it difficult to select custom-sized originals for the scan area precisely. But the image can be cleaned and touched up later with the bundled PhotoEnhancer from PictureWorks. Other software includes Quicken's ExpensAble SE, which lets you scan, file, and organize your personal expenses.

Fact File

Visioneer PaperPort OneTouch
Letter-size; 600 x 1200; 36-bit; parallel-port; \$170 street (after \$30 rebate).

Scanner Output Sample



Click on the image above to download the original scanner output file (~3MB)

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[Visioneer PaperPort OneTouch](#)
[Shop for Scanners](#)

Company Finder:
[Visioneer Communications Inc.](#)

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FIGURE 17E

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Screen 1.6. Look for place to buy Visioneer

computershopper.com - Netscape

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Bookmarks Netsite: <http://computershopper.zdnet.com/texis/cs/query.html?catid=C0000015&mid=C0001690>

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83 items found
Search Criteria: Visioneer Communications

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Any Type Color/Monochrome Any interface
 Select items and click 'Compare' to see side-by-side comparison. Click on the vendor to see individual specs.

Vendor	Price	Description
Visioneer Communications PaperPort 3000 <small>ZD Review</small>		
<input type="checkbox"/> Virtual Technology	\$152.00	Flatbed, 1 pass, Color, 300 x 600 dpi
<input type="checkbox"/> McGlen Micro, Inc.	\$133.65	Flatbed, 1 pass, Color, 300 x 600 dpi
<input type="checkbox"/> Buy Now Computer Products	\$133.32	Flatbed, 1 pass, Color, 300 x 600 dpi
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<input type="checkbox"/> PC Zone	\$118.72	Flatbed, 1 pass, Color, 300 x 600 dpi
<input type="checkbox"/> Corporate Raider	\$89.98	Flatbed, 1 pass, Color, 300 x 600 dpi
<input type="checkbox"/> Page Computer	\$64.00	Flatbed, 1 pass, Color, 300 x 600 dpi
<input type="checkbox"/> Tri State Computer	\$54.00	Flatbed, 1 pass, Color, 300 x 600 dpi
<input type="checkbox"/> Micro Warehouse	\$69.00	Flatbed, 1 pass, Color, 300 x 600 dpi
<input type="checkbox"/> MicroWarehouse	\$89.95	Flatbed, 1 pass, Color, 300 x 600 dpi
<input type="checkbox"/> McGlen Micro, Inc.	\$109.95	Flatbed, 1 pass, Color, 300 x 600 dpi
<input type="checkbox"/> Micro@Net	\$87.89	Flatbed, 1 pass, Color, 300 x 600 dpi
<input type="checkbox"/> Buy Now Computer Products	\$58.00	Flatbed, 1 pass, Color, 300 x 600 dpi
<input type="checkbox"/> Comtech	\$84.57	Flatbed, 1 pass, Color, 300 x 600 dpi
<input type="checkbox"/> Comtech	\$54.00	Flatbed, 1 pass, Color, 300 x 600 dpi

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Figure 17F

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Screen 1.7. Again back to editors' choice

PC Magazine: Desktop Scanners -- Netscape

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Desktop Scanners

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Editors' Choice

- **Business: [HP ScanJet 6200C](#)**
- **Home/home-office: [Visioneer PaperPort OneTouch](#)**
- **Graphics professional: [Epson Expression 636 Artist 2](#)**

Users looking for a sturdy, easy-to-use scanner for day-to-day use need look no further than the HP ScanJet 6200C (\$400 street), our Editors' Choice for business. The intelligently designed unit offers both SCSI and USB connectivity, and its software driver combines the best of both worlds: Casual users get one button scans with no intervention needed, while more sophisticated users will find advanced image controls just a mouse click or two away. Out put was among the best in the roundup.

For lighter-duty home and home-office buyers, our Editors' Choice is the Visioneer PaperPort OneTouch (\$200 street, or \$170 after rebate). This was the best document scanner we tested: Visioneer's OCR engine performed the best on our test. The OneTouch is also a commendable image scanner, showing sharp images with respectable retention of detail. For no fuss, text-intensive scanning, the OneTouch can't be beat. Honorable mentions in this class go to the MAG innoscan DTS-3060 (\$150), which delivers good image quality and a family-friendly software bundle; and the Artec ViewStation AM12E (\$85), an ultra-affordable unit whose image quality compared favorably with that of much more expensive units.

Graphics professionals who need uncompromising image quality and complete image control should look at our third Editors' Choice, the Epson Expression 636 Artist 2 (\$700). You can choose to use either the simple point-and-scan driver interface or the more robust SilverFast driver, a powerful, precise tool for fine-tuning all aspects of the scanned image. On our tests, photos were razor-sharp, colors were accurate and vibrant, and the scanner accurately captured faint skin blemishes on our test photo that other scanners missed. A

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FIGURE 17G

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Screen 1.8. Back to HP product review again

PC Magazine: Desktop Scanners - HP ScanJet 4100C, 6200C - Netscape

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Desktop Scanners

M. David Stone

HP ScanJet 4100C, 6200C

Fact File

HP ScanJet 4100C
Letter-size; 300 x 600; 36-bit;
USB; \$200 street

HP ScanJet 6200C
Letter-size; 600 x 1200; 36-bit;
USB and SCSI; \$400

Scanner Output Sample



Download the original scanner output file (~3MB)
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Related Information

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FIGURE 17H

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US99/28105

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) :G06F 17/60

US CL :705/14

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 705/14

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
NONE

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

NONE

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 5,832,457 A (O'BRIEN et al) 03 November 1998, col 2, lines 38-67; col 6, lines 16-52; col 9, line 4 - col 11, line 9; and col 12, line 42-61.	1-106
Y	US 5,649,114 A (DEATON et al) 15 July 1997, vol 77, lines 9-22; col 109, line 1 - col 110, line 44; col 112, lines 20-37; and col 118, lines 11-23.	1-106
Y	US 5,740,549 A (REILLY et al) 14 April 1998, col 5, line 63 - col 6, line 10 and col 7, lines 13-20.	1-17
Y	US 5,717,860 A (GRABER et al) 10 February 1998, col 3, lines 33-46 and col 5, line 24 - col 6, line 21.	18-53

Further documents are listed in the continuation of Box C. See patent family annex.

* Special categories of cited documents:	"T"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
*'A' document defining the general state of the art which is not considered to be of particular relevance		
*'B' earlier document published on or after the international filing date	"X"	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
*'L' document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y"	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
*'O' document referring to an oral disclosure, use, exhibition or other means	"&"	document member of the same patent family
*'P' document published prior to the international filing date but later than the priority date claimed		

Date of the actual completion of the international search	Date of mailing of the international search report
21 APRIL 2000	16 MAY 2000
Name and mailing address of the ISA/US Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231 Facsimile No. (703) 305-3230	Authorized officer JAMES W. MYHRE <i>Joni Hill</i> Telephone No. (703) 308-7843

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US99/28105

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 5,710,886 A (CHRISTENSEN et al) 20 January 1998, col 1, lines 13-34; col 8, line 42 - col 9, line 8; col 10, line 43 - col 11, line 12; col 11, lines 60-63; col 15, line 11 - col 16, line 67.	1-106
Y,P	US 5,857,175 A (DAY et al) 05 January 1999, col 3, line 17 - col 5, line 35; col 6, lines 13-49; col 7, line 14 - col 8, line 8; col 10, lines 42-64; and col 15, line 64 - col 16, line 67.	1-106
Y	US 5,812,769 A (GRABER et al) 22 September 1998, col 3, lines 33-46 and col 5, line 24 - col 6, line 21.	18-53
Y	US 5,173,851 A (OFF et al) 22 December 1992, col 3, line 1 - col 4, line 67.	18-53
Y	US 5,612,868 A (OFF et al) 18 March 1997, col 4, line 1 - col 5, line 67.	18-53
Y	US 4,910,672 A (OFF et al) 20 March 1990, col 3, line 1 - col 5, line 67.	18-53
Y,P	US 5,970,469 A (SCROGGIE et al) 19 October 1999, col 5, line 45 - col 14, line 11.	1-106